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ABSTRACT

The proceedings of the Regional Institute of Higher Education and Development's seminar on higher education's commitment to the basic health needs of society are recorded. The first part of the seminar contains the official opening and several addresses that focus on basic health care in Southeast Asia. Part II, "Contributions of Higher Education in Meeting Basic Health Needs in Rural Areas: Problems and Prospects," contains four papers examining strategies and contributions that higher education can make to basic health care in Indonesia, Malaysia, and Thailand. Part III, "Delivery of Primary Health Care in Urban Areas: Role of Tertiary Instruction," focuses on diarrheal disease in urban areas, as well as provides case studies on Malaysia, Singapore and Thailand. Part IV, "University Curriculum in Health-Related Disciplines: An Evaluation," focuses on the development of useful curricula concentrating in the same geographic areas as in the preceding sections. Part V, "Towards the Development of Basic Health Needs-Oriented Curriculum and Programmes," examines the need for trained personnel to deliver the programs successfully. In the final section several research proposals and recommendations are submitted by Singapore, Indonesia, Malaysia, and Thailand. Appendices include the program of the seminar and a list of all participants and observers. (IC)

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HIGHER EDUCATION AND BASIC HEALTH NEEDS

Proceedings of the Regional Seminar
Held in Chiang Mai, Thailand
21-23 December 1978

Edited by
S. Nasution & Banphot Virasai

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PREFACE

Health is a field in which Higher Education is able to give significant contributions for the betterment of society. RIHED organized the seminar on "Higher Education and Basic Health Care" with the purpose in mind of enhancing the commitment of Higher Education to society especially to those who are deprived of the most basic health needs in the rural as well as urban areas.

The benefits of scientific and technological advances have not reached the majority of the rural and urban poor. Most of the people in developing countries still live below the poverty line in deplorable insanitary environments where thousands of children go blind every year due to improper and inadequate food intake and where thousands are killed by acute diarrhoea and other diseases.

In this seminar outstanding scholars and professors of universities as well as representatives of various regional and international organizations exchanged ideas concerning the proper role of tertiary institutions in primary health services. Problems of basic health care in member countries have been critically reviewed and various solutions have been evaluated. The possible contributions of tertiary institutions to basic health needs in rural and urban areas have been examined. The seminar also tried to appraise the present curriculum of the medical faculty and other related disciplines of colleges and universities in the region. Especially fruitful was the exchange of ideas as how to develop and implement basic health needs-oriented programmes in various member countries and the difficulties encountered in such innovative ventures.

We wish to express our thanks to Dr. Tham Seong Chee for his excellent work as a rapporteur of the whole seminar and to RIHED staff for the arduous work of typing and proof-reading the manuscript.

Finally, we wish to thank the Roche Far East Research Foundation, Lee Foundation, Bangkok Bank Limited, Shell Group of Companies and Bridgestone Singapore Co. (Pte) Ltd. for their generous financial support to this seminar and the publication of its results.

We hope that this seminar will strengthen the trend toward stronger commitment of Higher Education to community improvement particularly in terms of its health.

March 1979

S. Nasution
Director, RIHED

PART I

OFFICIAL OPENING
AND
KEYNOTE ADDRESS

WELCOMING ADDRESS

by

Dr. S. Nasution
Director, RIHED

It is an honour and a great pleasure to have the privilege to greet and welcome you on behalf of the Regional Institute of Higher Education and Development at this official opening of the Seminar on "Higher Education and Basic Health Needs."

It is a great honour for us that this Opening Ceremony is being graced by the presence of His Excellency Kasem Suwanagul, the Minister of the Office of University Affairs, Royal Thai Government.

Our heartfelt thanks go also to our eminent host, Prof. Pradit Wichaiyadit, Rector of Chiang Mai University, for having generously agreed to act as host of this regional seminar and for the cordial and efficient cooperation we have received from him and his staff for making excellent arrangements for this seminar.

It is a particular pleasure for me to welcome here all our distinguished participants and observers. We are very pleased and grateful that you have accepted our invitation to attend this seminar and we would like to thank through you your institutions and organizations which have made your attendance possible.

This seminar has been organized with the objective of providing a forum for doctors, health officers, scholars and educators to discuss and review innovative approaches in the education and training of physicians and health-related personnel in the light of the basic health needs of the masses, especially the more deprived section of the population in urban as well as rural needs.

The problem of health is immense and complex. Health as defined by WHO is not merely the absence of disease but a state of complete physical, mental and social well-being. This broad and comprehensive definition makes health an exceedingly difficult quality to be measured with reasonable objectivity. Illness and disease provide a more tangible approach for measurement. Many of our sick people especially those in rural and remote areas have relative inaccessibility to professional medical care. It is well known that poverty brings problems of malnourishment, ill health and squalor. Deprivation of medical care, among other things, is caused by the unequal distribution of physicians in various segments of the population. Furthermore, what kind of diseases are most common in particular areas should be points to be considered in the training of doctors to make medical education more relevant to the existing needs of society.

The problem of access to health services involves more than the convenient location of facilities. It represents a complex interplay among traditional beliefs, social organization, and patterns of behaviour of health con-

sumers as they relate to a complex health care system. To understand rural health consumer behaviour, we need to consider the characteristics of rural society. There is a growing awareness that doctors should be concerned not only with technical matters but should also take into account social and human factors. For this reason it is felt that the medical education must include much more training in the human and social sciences.

Higher education and in particular the medical faculty surely is not the sole agency responsible for the basic health care of the people. It is the responsibility of the government and society as a whole. However, higher education may and can play a significant role in this respect. How universities may contribute toward this humanitarian goal will be the focal point of the discussion in this regional seminar.

We hope that this seminar will be beneficial for us all and that we will be able to identify problems to be dealt with at the national and regional level. We hope that through this seminar it is possible to achieve closer cooperation among the faculties of medicine in particular and generally among universities in this region in facing our common problems.

We are very pleased with the favourable response to this seminar and we feel confident that this meeting of distinguished leaders in the field of health and medical education will be a fruitful one.

May I now request H.E. the Minister to kindly give his opening address and declare the Seminar open.

OPENING ADDRESS

by

His Excellency Dr. Kasem Suwanagul

Minister of the Office of University Affairs, Thailand

It is indeed a great pleasure to address this gathering of distinguished scholars and government officials from Southeast Asian countries, as well as representatives of several international organizations. A seminar such as this one symbolises the spirit of regional cooperation, when common problems are discussed in a broader setting and there is an exchange of ideas and experience.

The topic selected by the Regional Institute of Higher Education and Development for this seminar, "Higher Education and Basic Health Needs", is indeed timely and challenging. Social and economic development requires healthy people capable of working their best. Furthermore, proper health care is a fundamental right for human beings. Caring for the health of the people is therefore of great concern of any government. However, it must be admitted that proper health care in many countries does not yet reach a large portion of the population. Among many reasons for this are: too few health personnel, the inappropriate geographical distribution of physicians, the great costs involved, the inefficiency of the health care delivery, and various cultural values and beliefs concerning health and sickness.

How to make health services accessible to all citizens at a reasonable cost, especially those in the rural areas, is of paramount interest for the government. As far as institutions of higher learning are concerned, it is incumbent upon them to find ways and means to give medical education which will help meet basic health needs. It is important also to inculcate into the hearts and minds of medical students a willingness to work in the villages, even in far-flung areas. It is important to give them an understanding of the social milieu within which they will work. They should be taught how to plan health services as well as know how to educate the villagers in the basic principles of good health.

A doctor working in and for the community should have more than just the knowledge and skill to treat patients. He should possess a sense of "social commitment", a willingness to serve society, a sensitivity to the feelings of others, the capacity to foster good human relationships with less educated people. Ways should be found to develop this kind of attitude. Medical practitioners in the community health services should be able to fulfill a broad role as healers, planners, managers, teachers and social workers.

Medical education, to be effective, must be closely geared to the health problems of the society it seeks to serve. A survey of the present and future health needs of the country with all its varying problems, urban as well as rural, should be one of the bases on which the curriculum of medical schools should be developed. And nowadays there are new health problems, such as those arising from pollution and other environmental hazards. All these should be taken into full consideration in medical training.

For an institution of higher learning to make a positive contribution in satisfying human health needs, it is advisable to obtain cooperation among many agencies and many disciplines which are concerned with physical as well as mental health. Such cooperation may very well start with meaningful and dynamic dialogue in a seminar or conference.

Debate and deliberation may lead to a revision, a re-orientation and even overhauling of the medical curriculum. Changing the curriculum is a necessity when facing the new situations and the new conditions of this ever-faster changing world. However, to change programmes and methods, however difficult, proves to be easier than changing the attitudes, values and ways of thinking of those responsible for their implementation.

I fully realize the magnitude and significance of the problems to be pondered in this Seminar. I sincerely hope that this Seminar will bear fruits which will benefit all the people, especially those who are not well off.

On behalf of my Government, I note with pleasure that the Regional Institute of Higher Education and Development has chosen a very crucial topic for discussion. This Seminar will surely help to promote a better understanding and a closer cooperation among universities in Southeast Asia.

May this Seminar be a successful and fruitful one.

Ladies and gentlemen, I now take pleasure in declaring this Seminar open.

GREETINGS

by

Prof. Pradit Wichaiyadit
Rector, Chiang Mai University

On behalf of Chiang Mai University, I wish to extend to you all our warmest welcome. We are very willing to cooperate with regional organizations such as RIHED. And this is the second time that Chiang Mai University has the honour of working with the Regional Institute of Higher Education and Development.

May I express my best wishes to you all for the success of this worthwhile Seminar and to each and everyone of you a very Happy New Year.

KEYNOTE ADDRESS

BASIC HEALTH CARE IN SOUTHEAST ASIA: PROBLEMS AND PROSPECTS

Prof. Dr. Okas Balankura*

Needs for human health care have been existing naturally since ancient times. In seeking relief of illness the evil spirit was blamed as the cause and the healer made ceremonial acts to get rid of the spirit. It is this kind of healing which still exists in most developing countries in Southeast Asia today. Herbs are used by traditional healers. Acupuncture originally developed in China long ago is being widely used by Chinese traditional doctors with an interesting development to anesthetic method for major surgery of modern medicine. The so-called modern or Western medicine has come to this part of the world since colonial era through religious missionaries. It has greatly developed since the second World War in both curative and preventive aspects. However, its rapid growth has not been in keeping with socio-economic developments. Well equipped hospitals with medical specialists and nurses are always located in urban areas where only about 15 per cent of the population live. Some people living in rural areas come for medical care in those crowded city hospitals, most of them for minor problems. The remaining 80 to 85 per cent who are low income and less educated farmers in remote rural areas seek health care from traditional healers, drug stores selling modern drugs, injectionists, and from government health centres. The coverage of health care given by government facilities is well under 30 per cent. It is of great concern to the medical profession and the government about such an inadequate coverage. Ways and means have been tried to find a suitable and effective system of providing health care. Yet there are many problems to be solved and constraints to be overcome in the years ahead.

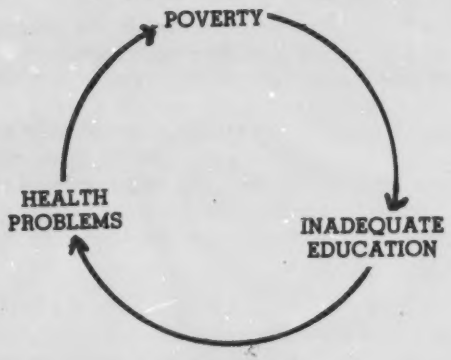
In providing health care to the people, one may think of a similar kind of care that you and I are receiving should be provided to all. Actually the needs felt by the people living in a different socio-economic and cultural environment are different. It is important to know the felt health needs of the people in order to obtain their cooperation and participation in any health care activity. The provision of real health needs is of course the ultimate goal but it has to be gradually developed and be in keeping with socio-economic development.

The common health problems in developing countries, particularly in Southeast Asia are more or less similar, i.e. high rate of population growth, high morbidity and mortality of pre-school children and diseases due to malnutrition, infectious and parasitic diseases. These are mostly preventable because their causes are not medical in nature but mainly associated with socio-economic and cultural conditions. Poverty and inadequate education

*Professor and Chairman, Department of Surgery, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand.

of the rural inhabitants have influence on their health conditions, which in turn aggravate poverty (Figure. 1). If this vicious circle continues, the development of health care will be more difficult and ineffective.

Figure 1



The existing health care system of Thailand has been continually revised, hopefully for the better. The Ministry of Public Health is responsible for the nationwide services including promotive, preventive, curative, and rehabilitative aspects of physical and mental care. In the City of Bangkok the city hospitals, military and police hospitals, and highly specialized medical school hospitals give services to some five million population and to those from the surrounding provinces. Private sectors also provide health care in both urban and rural communities. There are seven medical schools, four of which are in Bangkok including a newly developed military medical school, and three in other regions of the country, i.e. Chiang Mai in the north, Khon Kaen in the northeast and Songkla in the south. In every town or main district of a province in Thailand there is a provincial health office. The provincial health office is headed by a provincial medical officer; immediately under him are the director of the provincial health office and the director of the provincial hospital. At the district level it has been planned to have a district hospital with 10 to 60 bed capacity and 1-3 doctors. Presently there are about 600 districts (which are units within the provinces) in the country, but only less than 50 per cent of those have district health centres or hospitals and only about 30 per cent are staffed with medical doctors. At sub-district level there are sub-district health centres or midwifery centres. The sub-district health centre is staffed with a sanitarian and a midwife, and a midwifery centre with a midwife. A sub-district composes of about 10 villages with an average population of about 6,000-8,000. There are about 5,500 sub-districts and only one half of those have sub-district health centres or midwifery centres.

The present production of MD's and other categories of health workers cannot meet the needs of rural health care as it is now organized. Moreover, underproduction is aggravated by maldistribution as physicians gravitate to population centres (particularly Bangkok with a physician-population ratio of 1:less than 1000), leaving the rural areas with critically scant physician coverage of 1:25,000-1:100,000 physician-population ratio. Coverage of sub-districts and villages by sub-district health centres and midwifery centres with sanatarians and midwives is even more sparse. Besides inadequate distribution of health centres and personnel is the problem of under utilization of the existing rural facilities. As mentioned before, well under 30 per cent of health care provided in rural areas comes from government facilities. The facilities of the private sector facilities are utilized more frequently by villagers even though government facilities are equally available. Perhaps this is due to the fact that most non-MD health personnel in government health centres have neither sufficient training nor the authority to provide curative treatment as desired by villagers. Another factor is the lack of sound attitude of the personnel in health centres towards their service to the community.

The weak linkage of the official health care to the community is another problem. There is a one-way communication, from the service provider to the consumer. Furthermore services and personnel are usually made available through central directives from the Ministry not in response to the local needs of the community. In addition, there is little communication or co-ordination between government facilities and the multitude of practitioners in the private sector.

The health problems in the developing countries of Southeast Asia particularly Thailand, as already discussed above, can be regarded as mostly preventable diseases, overgrowth of population, and unfavourable socio-economic conditions. In short, problems relating to health care are inadequate coverage due to such factors as maldistribution, insufficient production and inappropriate training of MD's and non-MD health personnel, underutilization of existing resources, poor linkage and with low participation by the community, and other administrative factors.

In the planning of community development, including health, three components, i.e. needs of the community, available resources and technology should be considered. The relationship of the three is shown in the diagram (Figure. 2).

The small shaded area in the middle, covering the three components indicates that only little available resources and technology are utilized to meet the needs of the community. The remaining unshaded areas indicate great underutilization of resources and technology while the greater part of the community needs is left unmet. The planning of community development should aim at expanding the shaded overlapping area, ideally covering all three circles completely. This would mean that all available resources and appropriate technology are fully utilized, resulting in the satisfaction of all the needs of the community.

Figure 2

All governments of the world are concerned with the health needs and health care problems of their people. At the International Conference on Primary Health Care which was sponsored jointly by the WHO and the UNICEF in Alma-Ata, USSR, on 12 September 1978, delegates from 140 nations and numerous non-governmental organizations adopted the "Declaration of Alma-Ata". The Declaration, unanimously, approved, calls for urgent and effective international and national action to develop and implement primary health care throughout the world, particularly in developing countries. An acceptable level of health for all the people everywhere should be achieved by the year 2000 through a fuller and better use of world's resources.

The Declaration does have great impact on the prospects of health care development. Primary health care has currently been a prominant topic of discussions, which include the attempt to conceptualize and clarify the term, and to establish a plan for development and implementation. It is defined as "essential health care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at cost that the community and country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination. It forms an intergral part both of the country's health system, of which it is the central function and main focus, and of the overall social and economic development of the community. It is the first level of contact of individuals, the family and community with the national health system bringing health care as close as possible to where people live and work, and constitutes the first element of a continuing health care process". (Quoted from the Declaration of Alma-Ata)

The Ministry of Public Health of Thailand has planned, organized and started implementation of the primary health care by introducing Health Communicators and Health Post Volunteers. The purpose is to re-establish

the credibility of the official health delivery system to facilitate entry and to greatly expand its coverage to all villagers. These volunteer groups also serve as a first-line first-aid care, referrals, and health reporting. They are selected through communication sociogram studies and by village committees. They are usually influential members of the local village communities. They are expected by their empathy and similarity to their village peers, to overcome whatever social gap might exist between the patient consumer and the government provider. After a short period of training, the Health Communicators are able to recognize health problems which are most common to the area. Furthermore they come to know the personnel and available facilities as well as how to deal with them. They initiate the flow of patients into the network of integrated services. They are also expected to follow up the activities after the services have already been received, and gather and disseminate health information.

Health Post Volunteers are intermediate persons between the Health Communicators and the first level of the official health delivery system. They are chosen by the Village Consumer Adjunct Committees, at least one from each village. During a two-week training period the Health Post Volunteers learn to recognize common illnesses found in their area. Moreover they learn to give first-aid and treatment for simple ailments and injuries by using basic non-prescription medicines as available in health centres. They take care of patients who come to them directly, or who are referred to by Health Communicators, and send patients who need more sophisticated care to health centres.

There is also a training programme for traditional midwives who practise in the villages in order to upgrade their technical skills and coordinate their activities with government health services.

Another category of government health personnel developed by the Ministry are paraphysicians or physician's assistants in order to extend health care especially the curative aspect to the peripheral district health centres or hospitals and sub-district health sub-centres. In the past, there have been only few physicians who resided in any of the facilities outside the provincial hospital. This might be a major reason why villagers bypass health centres and go directly to the hospital or private MD clinics in the provincial town. Para-physicians and physician's assistants are selected from nurses, sanitarians, or midwives. After a 4-12 months period of competency-based medical and health training, they are expected to be able to deal with the most frequent health problems, and to recognize those more complex ones which require the attention of the physician. They are also trained in preventive health technology which is a major element in rural health centre's preventive and promotive work. Consequently, it is expected that the paraphysicians will be a key personnel in providing maternal and child health, family planning, nutrition, and other integrated health services. Since their work, training and responsibilities are closely aligned with those of physicians, there must be a close supervision by the latter. The services provided by paraphysicians function as a kind of extended secondary health care which is given by the physicians at the district health centres or hospitals. The tertiary health care is the provision of more complex care in urban

communities at provincial hospitals or medical school hospitals or at the hospitals in the capital city.

In view of the health care as a total or integrated care, encompassing preventive, promotive, curative and rehabilitative aspects, the health manpower development should be innovated at all levels. The existing training of sanitarians, midwives, and other auxiliaries should be geared toward one category, that is the '*multipurpose health worker*'. These multipurpose health workers will be the first level of the official health delivery system with whom the Health Post Volunteers come into contact directly or refer the patients to. Next to the multipurpose health workers should be the *para-physicians* who will be trained straight after their general education, to be able to provide total health care at sub-district or district levels. They are responsible to local physicians either at the district or provincial hospitals as already mentioned before. Such production of the health manpower will be most economical and appropriate.

The training of physicians and nurses should also be brought up to date or innovated in keeping with the development of *appropriate health technology*. This subject should be further discussed during the seminar sessions.

Public health administration problems are more of a political matter. They are important to the innovation of the national health care delivery system. However, it is suggested that delegation of authority from the central office of the Ministry should be done to make possible two-way planning, organizing, implementing and decision-making which will be more effective and preferable.

In addition to the development of the health sector, all related sectors and aspects of national and community development, in particular agriculture, animal husbandry, food, industry, education, housing, public works, communication and other sectors must be involved and coordinated.

In summary, the basic health needs and problems and constraints of the existing health care delivery system in the developing countries of Southeast Asia, particularly Thailand, have been touched upon. The "Declaration of Alma-Ata" calling for an acceptable level of health to be attained for all the people of the world by the year 2000 should have a world-wide impact on the development of primary health care, including Southeast Asia. Furthermore, a brief discription of the primary health care and the training of paraphysicians has been made. The prospects of health care delivery system have been discussed, including low-cost and appropriate health manpower development, and coordination of efforts of all related sectors which are involved in community development.

What I have already said concerning basic or primary health care in Southeast Asia, to be sure, is of a general nature. Concrete problems and specific prospects should be further deliberated and discussed in the ensuing sessions of this regional seminar.

PART II

CONTRIBUTIONS OF HIGHER EDUCATION IN MEETING BASIC HEALTH NEEDS IN RURAL AREAS: PROBLEMS AND PROSPECTS

DEVELOPING EDUCATIONAL STRATEGIES AND HEALTH CARE IN 60 VILLAGES, EAST JAVA – INDONESIA

Sumarto Danusugondho*

Introduction

Indonesia, like other developing countries, is making serious efforts in extending health care delivery to the total population, in particular the 80 per cent of 135 million people in rural areas scattered in hundreds of islands. This task is tremendous in magnitude since Indonesia inherits a system of health care which stresses only the curative aspect by building large hospitals in big cities only.

After Independence especially during the First and Second Five Year Development Plans, the Ministry of Health decided to implement the concept of comprehensive health care (promotive, preventive, curative as well as rehabilitative) in the system of health care delivery by establishing Health Centres in every Kecamatan (sub-district) in addition to the improvement of the quality and quantity of existing hospitals. The Health Centres have among others three important aspects:

1. Area concept — it must serve a defined administrative area, i.e. a Kecamatan with a population of about 30-50,000 people.
2. Comprehensive care, by implementing the 8-12 basic health services:
   a) Polyclinic (outpatient curative service)
   b) Maternal and Child Health, including Training of Indigenous Midwife
   c) Family Planning
   d) Communicable Disease Control
   e) Environment Sanitation
   f) Health Education
   g) Public Health Nursing
   h) Collection & Analysis of Vital Statistics
   i) School Health
   j) Dental Health
   k) Mental Health
   l) Laboratory Service
3. Team approach with a doctor as team leader.

Based on this concept it is now the task of the medical schools to prepare doctors who are able to function as a team leader in a health centre. Since Indonesia has 3,251 kecamatans (sub-districts) and the fact that of a maldistribution of doctors, the government requires a three year compulsory service of all medical graduates to work for the government, especially in health centres. Realizing this need, medical schools stress more and more on a community-orientated curriculum in all its departments.

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*Chairman of the Coordinating Body of Community Medicine, Faculty of Medicine, University of Airlangga, Surabaya, Indonesia.

Almost every medical school, public as well as private, start discussing, planning and implementing the so-called "community medicine" programme. The Faculty of Medicine of the University of Airlangga develops its community medicine programme not primarily based on educational needs but on improvement of the health care of people in the villages.

Historical Development

The Faculty of Medicine of the University of Airlangga at Surabaya being the host of WHO Regional Seminar on Community Medicine (29 Nov.-4 Dec. 1971) and National Workshop on Community Medicine (6-11 Dec. 1971) develops its Community Medicine programme through Faculty meetings, seminars and workshop in 1972, two experiments in 1973 which was built into the curriculum in 1974. It was decided not to change the Department of Public Health into the Department of Community Medicine, but a Committee was set up instead which later became the Coordinating Body of Community Medicine directly responsible to the Dean. It comprises staff members from various departments such as Public Health, preclinical and clinical departments.

Until 1975 the programme consisted of:

1. *Intramural Programmes*

   Coordinated lectures of basic sciences of Community Medicine and field surveys lasting two weeks for:
   - — second year medical students: Demographic Survey
   - — fourth year medical students: Health & Epidemiologic Survey
   - — fifth year medical students: Family Medicine

2. *Extramural Programmes*

   Four weeks internship for seventh year medical students in the Sidoarjo Kabupaten (Regency) General Hospital and its health centres (Porong, Taman and Krian). The objective is to give students the experience and skill to work in a regency general hospital with limited resources and in health centres implementing comprehensive health care programmes.*

In 1975 the Indonesian Consortium of Medical Sciences (CMS), the official national coordinating body for medical education, requested the Medical Faculty of the University of Airlangga to develop a "model curriculum" for Community Medicine to serve as an example for other medical schools. Airlangga was chosen because it was one of the two largest, most comprehensive and longest established medical faculties and because of the favourable existence of a progressive provincial health care system and a national health service research institute in Surabaya. In 1976 a series of workshops was held involving over 300 people representing two-thirds of the teaching staff and representatives of all levels of the student body, the provincial and local government and its health services and health centres.

*From Principles of MPKM at F.K. UNAIR by Sumarto Danusugondho, 1976.

In this extraordinary deliberation of more than five weeks, a plan evolved for a medical education programme known as "MPKM" or Model Pendidikan Kedokteran Masyarakat (Community Medicine Teaching Model), which has as its major goal the education of a "community-oriented" medical doctor.

It indicates a serious attempt to focus medical education at Airlangga on the national policy of providing better and more equitable health care for all people in the country.

The MPKM consists of teaching the basic sciences of community medicine in an integrated form but most important is its field programme.

The basic idea is to develop educational strategies in producing community oriented doctors to improve the health of the man in the village.

Objectives*

1. *Educational Goals*

   Briefly summarized the goal of medical training at the University of Airlangga is in general to prepare a doctor competent for practising comprehensive medicine as part of a team working with and for the people of a defined community:

   1.1 To be knowledgeable concerning the community characteristics, health problems and the health care referral system ranging from the family unit to the teaching hospital.

   1.2 To be capable of creating a community health care programmes, setting priorities, planning and implementing health programmes and serving as a leader in health care team.

   1.3 To serve as an agent of change, a promoter of health and a teacher in the community.

2. *Service Goals*

   In general to improve the health status of the people in the village by implementing "primary health care" concept, encouraging and helping community to be aware of its own health problems and to solve them. To be more specific the objectives are:

   2.1 The formulation of a "Community Diagnosis", i.e.

      2.1.1 The assessment of health problems (needs): illness patterns, mortality, sources of diseases, etc.

      2.1.2 The assessment of health resources: available health promoters, community organizations, established channels for community support outside the community.

   2.2 Priority: a ranking of health problems according to severity and solubility.

   2.3 Community Workshop: to combine the health needs found in 2.1.1 and the demands from the community expressed by the village health committee.

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*From Project DESADOK (Developing Educational Strategies And Desa Organization for Kesehatan) by Sumarto Danusugondho and Paul Alexander, 1976.

2.4 Community Therapy: to formulate a programme of solutions appropriate to the findings obtained in objectives one and two.
2.5 Implementation: to initiate a programme of therapy, incorporating (among other mechanism) the following:
2.5.1 The creation of a "primary health care" unit, suitably equipped and located so as to give effect to the local aspects of the programme of Community Therapy.
2.5.2 The training of a cadre (one or more persons) to continue the implementation of the Community Therapy and maintain the surveillace necessary for continuing Community Diagnosis.
2.5.3 The provision for continued self-sufficient growth in the framework of established health care system.
2.6 The provision of concurrent simple curative medical care and/or referral during the active period of the affiliation, i.e. when the Faculty health care team is in the community.

Methodology

Several characteristics of the programmes which were defined early in the planning period, are:

1. Early and continuous exposure: Medical students are exposed to the community from the second to the seventh year.
2. Pan-institutional: MPKM aspires to involve all faculty members from all departments, not only in the field activities, but also to have them reorient their teaching at the campus and teaching hospital, to be more relevant to the institutional goal of the training of "community-oriented doctors". Presently more than 10 per cent of the faculty is committed for approximately 5 per cent of their academic year for the implementation of the field programme.
3. Community centered: Whether on campus, in the health centres, in provincial hospitals or in the village, the programme activities focus on the community as the basic unit in the health care system. Emphasis is put on working with the members of the community, involving them in the task of identifying problems, determining priorities and methods of solution including primary health care. Students live and work with members of the community and governmental and private agencies.
4. Student participation: Students are stimulated to participate actively in planning, setting priorities, implementation and evaluation of both their own education and the programme by which it is effected.
5. Community participation: Student teams encourage the community to establish health committee and choose a health cadre to be trained. All health programmes to be implemented must be supported by the community itself using the available resources in that community.
6. Involvement of the existing health care delivery system. From the beginning the involvement of the Provincial and Regency Health Services as well as Health Centres were seeked for. In principle, the students must participate in the whole spectrum of referral system, from the village

level to the Regency Hospital. In fact what the students and the community did in the implementation of primary health care is in line with the "Educational Approach in Village Community Health Development in East Java, Indonesia".

The activities of the students in the field and their relationship with the health care facilities can be outlined as follows:

FIGURE 1*: HEALTH CARE FACILITIES AND SERVICES COOPERATING IN MPKM

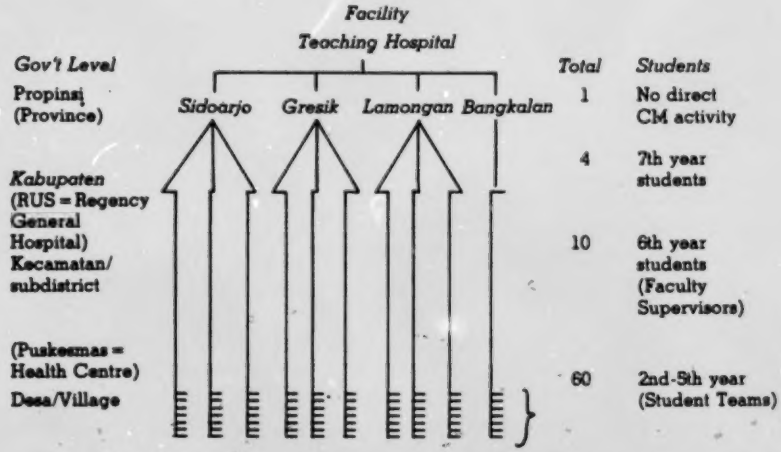
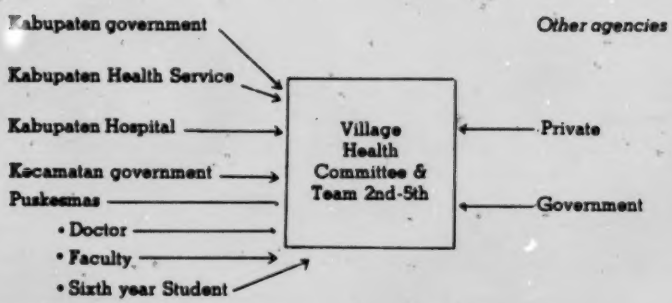


FIGURE 2*: SERVICE, ADVISORY AND MATERIALS RESOURCES FOR THE VILLAGE PROGRAMMES



*From Project DESADOK: Student/Teacher "Health Care Teams" Resident in Rural Indonesian Villages by Paul Alexander and Sumarto Danusugondho, 17 October 1978.

FIGURE 3*: ORGANIZATIONAL STRUCTURE AND FUNCTIONS OF HEALTH SERVICE INDICATING SIXTH AND SEVENTH YEAR MEDICAL STUDENT ASSIGNMENTS

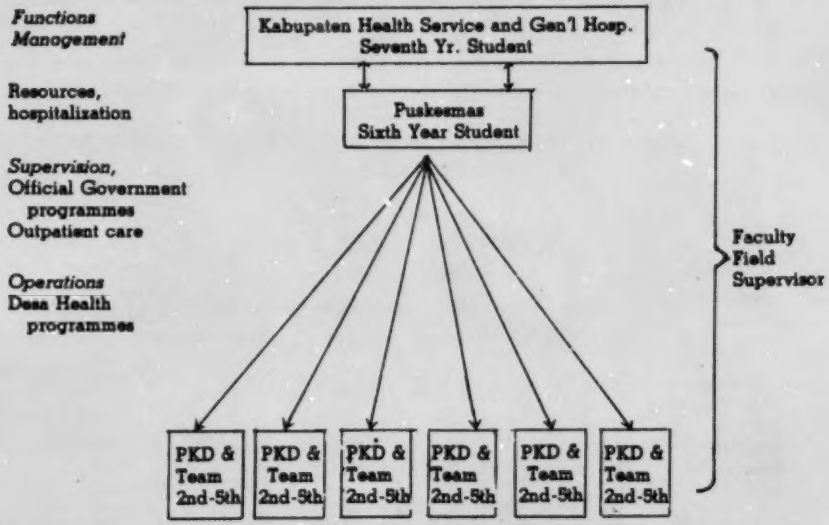


Figure 3 illustrates the local health care hierarchy (the referral system) and highlights the pivotal position of the sixth year student acting as assistant to the Puskesmas doctor.
Note: PKD = Panitia Kesehatan Desa (Village Health Committee)

*From Project DESADOK: Student/Teacher "Health Care Teams" Resident in Rural Indonesian Villages by Paul Alexander and Sumarto Danusugondho, 17 October 1978.

FIGURE 4*: COMMUNITY MEDICINE'S ACADEMIC YEAR

	Block cycle	"Merry-go-round cycle"	
Student year	2nd-5th Year (Village)	6th year (Health Centre & Village)	7th year (District Hosp. & Health Ctr.)
June	± 600 students × 2 wks.	± 20 students × 4 wks.	± 10 students × 4 wks.
July		20 different st.	10 different st.
August			10 different st.
September		20 different st.	10 different st.
October			10 different st.
November			10 different st.
December	same 600 st. × 2 wks.	20 different st.	10 different st.
January			10 different st.
February		20 different st.	10 different st.
March			10 different st.
April		20 different st.	10 different st.
May			10 different st.
Approx. Total	600 students	120 students	120 students

*From COMMUNITY MEDICINE at FK/UNAIR: Present Status and Problems by Paul Alexander and Sumarto Danusugondho, February 1978.

— Student teams are formed consisting of 2nd-5th year medical students, totalling 60 teams, each team of 2-3 students from each level and assigned to a village for the period of three years (two weeks in June and two weeks in December).
— The assignment of the 6th year medical student to work in the Health Centre for four weeks in rotation with the task to follow up and consolidate the work of the 2nd-5th year students teams in the villages.
— The 7th year students work in the Kabupaten Health Service and General Hospital for four weeks in rotation.

Implementation

After hectic planning, negotiation and logistical preparations the implementation began in June 1977. The subsequent activities can be summarized as follows:

1. Community Diagnosis — June 1977.
   Each team worked in a village and their tasks were divided among team members according to their level of competence. Some of the results were: mapping, household survey, weighing the Under Five health education.
2. Analysis and preparation of the Community Workshop (June-December 1977).
   Each team analysed its own data and set priorities of health problems (Health Needs).
3. Community Workshop — December 1977.
   Each team discussed with the village health committee the findings of the community diagnosis and asked the committee in deciding the "health demands". The result was a new list of agreed priorities of health problems which could be implemented using the available resources.
4. Follow-up, Community Self Survey and programme planning (December-June 1978).
   The 6th year student helped the village health committee to do the community self survey to ascertain the previous findings by the community themselves.
5. Programme planning and implementation — June 1978.
   Based on the findings of 1, 2, 3 and 4 each team together with the village health committee planned and implemented a programme which has the highest priority and is feasible to be performed.
6. Follow-up and preparation of the training of a health cadre (village health worker) — June-December 1978.
7. Evaluation and follow-up of the previous programme, plan and implement of a new programme — December 1978.

In general the plan for 1979, the last year of the affiliation with the village will be as follows:

8. December 1978-June 1979.
   — Follow up of the programme implementation and evaluation.
   — Training of the village health cadre by the 6th year medical students on simple diagnosis based on symptoms especially for diseases relevant in the community, how to treat and when to refer, principle of personal hygiene and sanitation, interpretation of the results of weighing the Under Fives and subsequent advice, reports of unusual happenings to the health centre.
9. June 1979.
   — Evaluation of the whole activity, in terms of educational objectives and programme achievements (service objectives). The team will investigate on how far the target has been met, also the improved coverage of the health centre, and the behavioural change of the village people in terms of awareness of health and willingness to solve their health problems.
10. June-December 1979.
    Two important results are expected in this period:
    — Improved instructional objectives of "community oriented education" for the medical students and manuals for field training which can be used as a core curriculum in medical schools.
    — Techniques in the form of modules or manuals that can be used to improve the health standards of the rural community.

Supervision

As was mentioned in the characteristics of MPKM, all departments in the Faculty of Medicine at Airlangga are requested to participate in the field programme. Each of the 26 departments (basic, preclinical, clinical sciences) nominate two experienced faculty members each year, of whom 40 are chosen to become field supervisors. The supervisors also stay in the field, accommodated at the health centres. They work in pairs during the two weeks in June and December while the 2nd-5th year student teams are in the village and once a month they supervise the 6th year students. Since there are four supervisors in each health centre, the 6th year medical students are supervised weekly by the faculty supervisors and the health centre doctor. For the 7th year medical students who work in the regency general hospital, the supervision is done by a team of staff members from the departments of Internal Medicine, Pediatrics, Obstetrics, Surgery and Public Health.

Virtually none of the faculty members has had specific training in Community Medicine. In preparation to their duty and responsibility supervisors attend a week long course organized by the Coordinating Body of Community Medicine. The preparatory course includes reading assignments, field visits and discussions. The general guidelines for supervisory duties are based on the original recommendations of the workshop group which set up MPKM and are modified according to a consensus derived from the discussion during the preparatory course.

Results

The MPKM is still in its second year of implementation, which makes it rather premature to judge its results. However, there are several aspects which can be mentioned as its achievement thus far:

1. During the Community Diagnosis in June 1977, the teams collected health and health related data from 60 villages in 10 subdistricts in four kabupatens. From these data and their analyses, the health problems of the 60 villages were known and these can be used either for educational purposes as well as for information to the village people concerning of their health problems. Most of the problems can be grouped into: nutrition, sanitation and infectious diseases.
2. During the workshops in December 1977, each village formed a health committee (10-20 people) who were active and became aware of their health problems; they expressed their demands and together with the student teams and health centre staff they planned a programme which can be implemented by using available resources. Since resources were limited, they tried to find the support from agencies outside the village, whenever feasible.
3. During the implementation period in June 1978, despite many difficulties due to limited resources in each village, there was at least one or more programmes which were implemented by the village people themselves assisted by the student teams. As examples the following may be mentioned:
   — building latrines and refuse disposals.
   — vaccination programmes and how to combat an outbreak of diarrhoea which occurred at that time.
   — nutrition education for women organizations in the village. In one village which was used for the trial, the student team explained and demonstrated the benefit of eel farming as a source of protein.

More results are expected, especially with the training of health cadre in each village so that later each village assisted by the health centre staff can use its resources to solve its own health problems.

Evaluation

Programme evaluation as usual is a very difficult matter. It is especially true in the case of MPKM where two aspects are involved: education and service. The latter is a means for the realization of the former, but the success or failure of either cannot be clearly separated from the other. It is possible to derive educational benefits from the mistakes of the service programme, but the real goal is to achieve maximum possible success in service in order to achieve the best educational programme. Evaluation of the service programme becomes part of the educational programme of the project. The project has not been able thus far to define satisfactorily specific educational objectives as well as the adequate formulation of service programme objectives. In spite of these short-comings the coming year is scheduled as

the year of evaluation. However, an attempt will be made in this paper to evaluate some aspects of the progress of the programme.

The successes, failures and problems can be summarized as follows:*

Student Education

Successes

1. Awareness: For the majority of students, Desadok provides their first real experience in coping with the realities of life in a rural setting.
2. Teamwork: In most instances students from different years and different groups have melted into closely knit working teams.
3. Increased confidence and ability to identify and seek solutions for problems.
4. Involvement: The student senate and individual students have volunteered to help with planning and implementing MPKM as an educational programme.

Failures

1. Academic relevance — The programme may be relevant to their future positions as Health Centres doctors, but most students are not convinced of its high priority to survive in the medical school.
2. Sense of continuing responsibility: Educational programmes are episodic and as yet most students are concerned with MPKM only while in the field.
3. Evaluation: As yet there is no satisfactory method of appraising individual student performance.

Problems

1. Specific educational objectives: Need input from students, health services and supervisors as well as time and expertise.
2. Reading materials: Limited body of literature of which very little is available in Indonesia.
3. Integration of second year students: New team members in succeeding years feel less part of the team and have less to contribute to operational programmes.
4. Role models: Exemplary Health Centres doctors are hard to find and doctors are very busy people. Students in general have been placed in areas with only part-time supervision by health service doctors.

Supervisors

Successes

1. Involvement: 80 of the 400 faculty members had served or are currently serving as supervisors.

*From Project DESADOK: Student/Teacher "Health Care Teams" Resident in Rural Indonesian Villages by Paul Alexander and Sumarto Danusugondho, 17 October 1978.

2. Enthusiasm: Several are serving or have volunteered for longer service motivated by enthusiasm for making the project a success.
3. Innovations: Individual teachers have helped to create new approaches to overcome vexing obstacles.

Failures

1. Academic relevance: Some are persuaded that MPKM is peripheral to the "real business of studying medicine".
2. Professional relevance: Many are convinced that their participation in MPKM is not beneficial to their own professional aspirations.
3. Sense of responsibility: Many do not satisfactorily exercise responsibility for the continuity of the effort. Most fail to regard the overall programme as a responsibility in which they share, preferring to think of it as "belonging to the Coordinating Body of Community Medicine".

Problems

1. Part time: MPKM is second to routine departmental duties but involves weeks away from home, private practice and departmental responsibility, thereby creating a burden.
2. Rewards and sanctions: Neither financial nor professional recognition is made for either good or bad performance.
3. Continuity: Supervisors serve only one year, but teams are active in the village for three years. Feelings of inadequacy have occurred in the second year group of supervisors. Both teams and village have felt the disruptions of change.

Villages

MPKM uses villages as educational laboratories but it aspires to benefit them by service. The correspondence can be seen between the "teaching hospital" and the "teaching community". It is important that those involved in both areas will benefit.

Successes

1. Acceptance: Student teams have been welcomed and well-supported.
2. Awareness: Expectations and aspirations are higher, knowledge has been increased.
3. Achievements: There are definite observable results of programmes in terms of physical changes (such as ditches, privies, weighing programmes).

Failures

1. Conviction: Many are still not convinced that they can, by their own efforts, make significant improvements in health.
2. Continuity: Many programmes lapse in the absence of student activity in the off months. After the teams leave; then what?

Problems

1. Financing: Often even the simplest programmes requires some funding; health is not always considered a high priority.
2. Tradition: Resistence to change particularly where cause and effect is abstract and examples difficult to prove.

Health Services

Successes

1. Joint agreement signed by the governor of the province, the director of the provincial health service, the rector of the university and the dean of the medical school.
2. Formation of a joint policy board and a working committee to consider problems and solutions between the medical school and the Health Service.
3. Initiation of meetings every other month in the field with kabupaten health officers.
4. Many examples of close cooperation at the village programme operational level.

Failures

1. Planning of programmes: difficult to get regular input from busy health service officials.
2. Occasional failures to support programmes previously agreed.

Problems

1. Communications: Mail, telephone, etc., are very difficult.
2. Changes in personnel: Requires frequent reorientation.
3. Student assignment to Health Centre with only part-time supervision of doctor.

SUMMARY

Since 1975 the University of Airlangga's Faculty of Medicine in Surabaya has tried to develop a Community Medicine Teaching Model, known as MPKM (Model Pendidikan Kedokteran Masyarakat).

It has two important aspects:

1. To develop educational strategies to prepare "community-oriented" doctors who are able to provide comprehensive health care to a defined community with the assistance of a health team, using available resources.
2. To improve the health status of the village people, by implementing the "primary health care" concept, which encourages and helps the

community to become aware of their own health problems and to solve them.

Sixty villages in 10 kecamatan with corresponding 10 health centres, within four kabupaten with four general hospitals in East Java are cooperating in this activity.

Teams of sixty 2nd-5th year medical students will stay in the community for two periods each of two weeks per year to develop a programme with the local people to improve their health status. Teams of ten 6th year medical students stay for four weeks in rotation at 10 Health Centres to act as a liaison and establish continuity of each activity to the 2nd-5th year students teams in the 60 villages.

Four teams of 7th year medical students stay for four weeks at kabupaten general hospitals to study and implement the services with the available resources.

The involvement of the university in the improvement of health in villages as well as the whole spectrum of health care referral is considered as an important aspect of the preparation of "community oriented" doctors to serve the health need of people in developing countries. The methodology, implementation and some of its results as well as several aspects of evaluation are discussed.

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CONTRIBUTIONS OF HIGHER EDUCATION IN MEETING BASIC HEALTH NEEDS IN RURAL AREAS IN MALAYSIA: PROBLEMS AND PROSPECTS

Molly Cheah*

Introduction

In the consideration of contribution of higher education in basic health needs, one has to first start with the health needs of the country and then relate this to what contributions can be made by Institutions of Higher Education. In many aspects, to function satisfactorily, the two can be considered as the two sides of a coin.

The objective of this paper is to first give an outline of the current health status of Malaysia as well as its health needs and then to briefly describe how Institutions of Higher Education have contributed or can contribute to the meeting of these needs.

The Country

Malaysia is a federation of thirteen states and a Federal Territory. Eleven of the states and the Federal Territory are in Peninsular Malaysia and the remaining two states — Sabah and Sarawak are in the island of Borneo. The total land area is 127,581 sq. mls. (330,484 km^2). Peninsular Malaysia is 50,806 sq. mls. (131, 588 km^2) and the states of Sabah and Sarawak cover an area of 76,775 sq. mls. (198,896 km^2). The annual rainfall is between 150 and 400 centimetres. The daily average temperature varies from 21°C to 33°C. Relative humidity is generally high everywhere. Night temperature is relatively cool.

The People

The estimated population and population density for 1977 is as follows:-

	1977 Estimated Population (Millions)	Density/km^2
Peninsular Malaysia	10.54	80
Sabah	0.78	11
Sarawak	1.12	9
Malaysia	12.53	38

(Source: *Economic Report 1977/78*, Treasury, Malaysia)

The community Composition in:-

Peninsular Malaysia

Malays	53.2%
Chinese	35.4%
Indians	10.6%
Others	0.8%

*Medical Officer, Division of Planning and Development, Ministry of Health, Malaysia.

Sabah

Kadazans	28.2%
Other natives	35.9%
Malays	2.6%
Chinese	21.4%
Others	11.9%

Sarawak

Ibans	39.6%
Other natives	10.6%
Malays	18.7%
Chinese	30.1%
Others	1.0%

About five out of seven persons live in rural areas in Peninsular Malaysia. Among the Malays only 15 per cent live in the urban areas whereas among the Chinese and Indians, 46.3 per cent and 34.7 per cent respectively, live in urban areas. The degree of urbanisation in Sabah is 16.5 per cent while in Sarawak it is 15.4 per cent of the population. The indigenous groups in Sabah and Sarawak show an overwhelming concentration in the rural areas — 96.6 per cent of the Kadazans in Sabah and 97.8 per cent of the Ibans in Sarawak live in the rural areas.

(Source: *Population Census 1970*).

Health Expenditure

The Health Budget for 1978 is M$665 million out of which M$577 million is for Operating Expenditure and M$88 million for Development Expenditure. The Operating Expenditure is 7.16 per cent of the country's total appropriation for Operating Budget whilst the Development Expenditure is 1.89 per cent of the total Development or Capital Investment Cost.

The per capita health expenditure is M$53.00 or US$21.20. Breakdown of the Health Budget is as follows:-

	M$	%
Development or Capital Investment Cost	87,879,340	13.21
Operating Expenditure		
General Administration	17,184,000	2.58
Public Health	165,495,000	24.88
Patient Care	363,402,000	54.62
Supportive Services	31,327,000	4.71
	665,287,340	100.00

(Source: *Supplies Act Malaysia 1978)*

Health Status

The general health status of the population continues to improve as indicated by the decline of various mortality indicators.

VITAL STATISTICS — PENINSULAR MALAYSIA 1950-1976

	1950	1955	1960	1965	1970	1971	1972	1973	1974	1975	1976
Crude Birth Rate	42.0	43.0	40.9	36.7	32.2	32.6	33.3	31.9	32.1	31.4	31.7
Crude Death Rate	15.8	11.5	9.5	7.9	6.9	6.8	6.9	6.9	6.6	6.5	6.2
Rate of Natural Increase	26.2	31.5	31.4	28.8	25.3	25.8	26.4	25.0	25.5	24.9	25.5
Neonatal Mortality Rate	34.0	30.0	30.0	26.0	22.9	22.5	22.9	23.1	22.0	20.6	19.1
Infant Mortality Rate	102.0	78.0	69.0	50.0	40.8	38.5	37.9	38.5	35.4	33.2	30.7
Toddler Mortality Rate	N.A.	N.A.	8.0	6.0	4.2	4.0	3.37	3.37	3.13	3.1	2.56
Still Birth Rate	N.A.	N.A.	22.0	23.0	22.4	22.3	21.1	20.2	19.3	17.1	16.9
Maternal Mortality Rate	5.3	4.2	2.4	2.03	1.48	1.24	1.07	1.05	0.96	0.83	0.78

(SOURCE: Department of Statistics, Malaysia.)

The decline in the death rate has not been matched by a comparable decline in the birth rate. Consequently, population growth remains high.

TEN PRINCIPAL CAUSES OF ADMISSIONS AND DEATHS IN HOSPITALS IN PENINSULAR MALAYSIA IN 1976

Causes of Admissions	% to Total Admission	Causes of Deaths	% to Total Deaths
Accidents	15.12	Diseases of Early Infancy	19.78
Complications of Pregnancy	4.43	Heart Diseases	15.08
Mental Illness	3.60	Accidents	11.44
Diseases of Liver	3.31	Cardio-Vascular Diseases	8.32
Gastroenteritis	3.11	Neoplasms	6.95
Heart Diseases	2.75	Pneumonias	4.66
Diseases of Skin	2.39	Tuberculosis	3.93
Diseases of Early Infancy	2.17	Diseases of Liver	2.30
Cardio-Vascular Diseases	2.06	Gastroenteritis	2.18
Neoplasms	1.92	Deficiency Diseases	1.23

(Source: Medical Records Unit, Ministry of Health, Malaysia)

The morbidity and mortality patterns of diseases seen in hospitals give a picture of health problems representative of a developing country but the appearance of heart and other cardiovascular diseases is indication of an emerging affluent society. It is a difficult task to identify in statistical terms, strictly rural health problems for the simple reason that the data we possess does not permit the separation of morbidity or mortality data of rural areas as distinct from that of urban areas. Therefore in identifying rural health problems, we are compelled to depend on its relation to a particular ethnic group e.g. higher toddler mortality rate among Malay children reflects nutri-

tional problems to be in the rural areas, and on the assumption that certain diseases are rural in nature, especially those related to poor sanitation, unsafe water supply and poverty.

Health Services

Urban health services are based on government hospitals and urban clinics and a variable, often extensive private sector. Rural health infrastructure consist of a network of main health centres, health subcentres, jururawat desa clinics (Community nurse clinics) and the midwife clinics. The health subcentre is being upgraded to a main centre which is staffed by a doctor, a dental officer and a team of paramedics and auxiliary personnel. The jururawat desa clinic has been converted from midwife clinic. The jururawat desa (J.D.) is a fully trained nurse midwife and who is given additional training in community health, first aid, simple medical care and community development. Services provided by this rural health network include:

1. Maternal and Child Health Care
2. Medical Care
3. Control of Communicable Diseases
4. Environmental Sanitation
5. Dental Health Services
6. Health Education
7. Laboratory Services
8. Maintainance of Clinic Records

The remote areas are being serviced by mobile clinics operating from the health centres.

District hospitals are scattered throughout Malaysia, mainly in centres of population. They have an entirely curative role and function as referral centres for illnesses or at risk pregnancies seen at health centres.

Current Development of Health Services in the Rural Areas

Although health services in the rural areas were virtually non-existent before independence (1957), the development of the Rural Health Service Scheme, originally mooted in 1955, was intensified from 1960. This was done by the construction of health centres and midwife clinics through a series of five-year plans. Achievement so far, based on facility: population ratio is less than half of the target originally set in 1955.

Facility	No. (1977)	Facility: Population Ratio	
		Target	Achieved
Main Health Centre	62	1:50,000	1:112,900 (44%)
Health Subcentre	248	1:10,000	1: 23,250 (43%)
Midwife Clinic cum-quarters	1,310	1: 2,000	1: 4,390 (40%)

(Source: Division of Planning & Development, Ministry of Health, Malaysia)

Following Operations Research on local health services carried out jointly with the World Health Organisation in 1969-1971, a decision was made during the mid-term review of the Second Malaysia Plan in 1973 to gradually convert the three-tier system of Main Health Centre, Health Subcentre and the Midwife Clinic to a two-tier system, for every 15,000-20,000 people and a jururawat desa clinic for 3,000-4,000 people. This conversion is being implemented by upgrading existing health subcentres to main centres and midwife clinics to multipurpose jururawat desa clinics. It is estimated that this conversion process, which include recruitment, training of new personnel and retraining of existing personnel, would be completed by 1995 to cover the total population. In the meantime, integrated mobile teams had been introduced to visit the remoter villages once a fortnight, until permanent health facilities are made available. Unfortunately this programme has not proved to be very successful. It is then necessary to look for other alternatives, especially in view of the rising expectations of the people themselves for better health. A primary health care approach geared to the Malaysian situation appears to be the answer. This approach is also in line with the 1975 World Health Assembly Resolution which urged member states "to take the necessary steps to develop and implement plans of action in the area of primary health care, leading to the provision of a comprehensive health care system to the total population".

In response to this, the then Acting Director-General of Health tabled a paper before the Planning Committee of the Ministry of Health in November 1976. This paper included a proposal for a survey "to identify areas underserved by the existing rural health services and to identify various local resources which can be utilized in planning Primary Health Care in Peninsular Malaysia".[1] The survey was conducted in 1977/78 in forty-four districts in Peninsular Malaysia, involving 9,582 villages with a population of 3.8 million.[2] It identified 2,315 villages with a population of 446,760 to be underserved, representing 24 per cent of total villages but with a population of only 12 per cent.[3] A preliminary study was then carried out in these villages to determine availability of local resources — human, material and communication. The community's view was also sought using set questionnaires on the possibility of utilizing these resources to plan for primary health care to meet their basic needs. The findings of this survey were discussed at a National Workshop in May this year. The discussion covered the scope, feasibility and organisation of a Community Health Programme to provide basic health services to the underserved areas identified. Participants to the workshop include representatives of government agencies, universities as well as professional and voluntary bodies. The recommendation made is being studied for implementation. However, realising the preliminary nature and limited scope of the studies made so far, the workshop also recommended that further studies be initiated, not only in "underserved" areas but also the "served" and "overserved" areas "in order to make the Health Service Delivery System more effective and efficient". This supports the recommendations made at the Regional Conference on Primary Health Care in Manila in November 1977.[4]

From what has been described so far, it would seem that the health needs of the country would fall into three large, perhaps overlapping categories, viz:

— Research needs as exemplified by the need for more studies to identify problem areas
— Training needs to provide sufficient number of personnel in the various categories so that the expanded services can be adequately manned, and
— Service needs which are created by the attempt to provide basic medical care to all the population as well as in the variety of services for various served areas. Further the quality of such services should not be compromised in this attempt to expand.

Thus the contributions of Institutions of Higher Education to the health needs of the country can be considered in the light of the above in Research, in Training and in Service.

Contributions – Past, Present and Future

Research

There is an increasing awareness of the importance of traditional medicine in the country particularly in the rural areas. An earlier Operations Research (O.R.) finding show that only one-fifth of the sick in the rural areas seek treatment at government clinics[5] and the recent survey of 670 villages shows there are 395 traditional birth attendants (TBAs) and 329 traditional healers practising among the population of 150,000 people, against two private practitioners of Western medicine.[6] This seems to point to an earlier observation that majority of villagers still seek care by traditional healers. It then becomes necessary for further research into the persistance of traditional medicine, the extent and nature of its contribution to health care and the role they can fulfil in the general health care delivery system. It would also be interesting to determine, as part of such research, the extent to which health personnel be oriented to the indigenous system as part of their formal training. It is not my intention to advocate that traditional practices be preserved and encouraged in totality as they now exist. A reflection on the persistance of such practices may provide us with ways to develop the most appropriate health care system suitable to the social and cultural characteristics of the community — "one that is in close conjunction with the modern system of medicine so as to take advantage of the best of both".[7] Besides, they are too important a factor to be ignored in a system short of manpower and with predominently rural needs. Chen, in 1975, noted that " ... patients usually view the various medical systems available in West Malaysia as complimentary rather than antagonistic and are prepared to move from one system to another and back as they search for relief or cure".[8] This is confirmed by a more recent study in Sarawak that the rural Ibans' most prefered form of treatment is one that combines both manang* treatment and modern medicine.[9]

*Manang — The shawan or medicine man of the long house community in Sarawak, who is reputed to have special power of being able to communicate with the spiritual world.

Health and disease problems related to rapid population growth are still prevalent. The average number of children per family among the rural population is 5.6. Realisation that rapid population growth gives rise to multitudes of problems, health and socio-economic, led the Government to officially accept family planning as an important strategy in the economic development of the country. The National Family Planning Board (NFPB) was formed in 1967 under the aegis of the Prime Minister's Department. It started its services in the urban areas. Expansion of its programmes into the rural areas faces problems due to lack of infrastructure and shortage of manpower. Thus, integration of family planning into Maternal and Child Health Services became undoubtedly necessary, not only to overcome the above problems but also to provide family planning as part of a package service for the family. Therefore, the role of the traditional birth attendants (bidan kampong) who still attend to about 40 per cent of deliveries in rural areas, had to be appraised.

The Ministry of Health and NFPB collaborating with University of Michigan's Department of Population Planning studied the feasibility of utilizing the TBAs in the provision of family planning services in 1972. This included selection of candidates, their training and programme implementation in project areas. Unfortunately, this contribution from the University of Michigan had limited success as their funds ran out, but the usefulness of the participation of the TBAs in the programme cannot be denied especially in establishing better rapport with the rural mothers.

A recent study on maternal health and early pregnancy wastage, showed that induced abortion is a problem that has rapidly increased in intensity since 1970.[10] In a country such as Malaysia, where the socio-political climate is not favourable for the liberalization of laws on induced abortion, the need to strengthen the impact of family planning is imperative. Yet the family planning effort, to provide people with safe and effective fertility regulating methods has had an uncertain success. No doubt, this calls for further research, particularly of issues in the field of social sciences. This may provide insights leading to more effective family planning programmes.

Morbidity and mortality figures indicate some major rural health problems to be related to that of the mother and child. Several studies to determine nutritional status of children, conducted by the Institute of Medical Research and the Department of Paediatrics of the University of Malaya show that malnutrition to be prevalent in urban as well as in rural areas.[11-13] Major programmes have been organised and delivered through the rural health scheme. Although routine procedures and norms have been laid down in these programmes, methods of delivery of services including technological approaches used are being reviewed from time to time to improve effectiveness. Two feasibility studies are currently undertaken, in collaboration with the two medical schools in Kuala Lumpur — The Risk Approach for Maternal Care Programme and the Oral Rehydration Programme. The Science University's Centre for Policy Research is collaborating in another project to establish an information system based on childbirth data to improve management of mothers and their children.

Methods of delivery of services had been developed for delivery by a team of well-trained paramedics and auxiliary personnel through fairly sophisticated infrastructure of the rural health units. New methods have to be found to deliver services to areas with no infrastructure and no trained personnel. These underserved areas, which have been identified recently, have special characteristics in that they are remote with very poor communication, some even inaccessible. The villages are scattered with small populations and many are migratory in nature. Health service records show the estimated percentage of population who had first contact with a health service facility relevant to their needs during 1976, to be 4 per cent for family planning, 23 per cent for child health care (below 5 years of age), 30 per cent for deliveries, and 40 per cent for prenatal care.[6] 65 per cent of the houses are without sanitary latrines and only 13 per cent of the houses utilize pipe-water and tube well water for consumption.[6] To develop the type of health centres and clinics presently existing in the "served" areas may not be economically viable. Therefore, there is a need to research for an alternative system best suited for such a community.

Training

There has been a general increase in the concern for medical schools to produce "the right kind of doctors ... ", "doctors who will undertake and be able to improve the delivery of primary health care services ... ", "doctors whose training is relevant to the health needs of the community ... " etc.[14, 15] It has been generally believed that the geographical and subspecially maldistribution of doctors derives primarily from the curricular content of undergraduate education. The faculty with which the students work in medical schools serve as extremely important models in influencing medical students towards their choices of careers. Since university medical centres are principally institutions with highly sophisticated and specialised facilities, the educational programmes developed in such institutions are believed to place excessive emphasis on research problems and on unusual illnesses. If this is true, there appears to be a gap between what is being taught and what is needed for health care as seen in the Malaysian situation. Hospital statistics show that orthopaedic surgeons and psychiatrists comprise 4.8 per cent (10) and 3.5 per cent (8) of total specialists in government hospitals in Peninsular Malaysia, though accidents and mental illness rank number one and number three among the ten principal causes of hospital admissions in 1976. Similarly paediatricians comprise 6.8 per cent (15) of total government specialists while children under fifteen years of age make up 41 per cent of total population. Diseases of early infancy rank eighth among the principal causes of hospital admissions in 1976. It is the number one cause of deaths among hospital admissions, accounting for 20 per cent of total hospital deaths during the same year. Of a total of 3,360 doctors registered with the Malaysian Medical Council (as on 31.8.78) 2,020 are in public services and 1,340 are in the private sector. Among doctors in the public services, there are only 80 health officers (including port health) and 87 medical and health officers in the rural health services, both categories representing 8.5 per cent of doctors in the public sector.

As a consequence of the view that it is the undergraduate curriculum that influences the future behaviour of the students, endless literature have been written on development of new curriculum and to provide educational programmes in community hospitals etc,[16-21] yet, whether, in fact, the character of medical schools faculties has been such an important influence is open to debate. Perhaps it is during residency training, and not in the undergraduate phase of medical school, that the behaviour of the doctor is most significantly determined.

Sub-professionals, paramedics and health auxiliaries have always been the main providers of services in the rural health scheme. Rapid expansion of such services during the past twenty years has brought about a critical shortage of trained and qualified manpower. In view of this, the Ministry of Health stepped up its training programmes as a matter of highest priority. A two-pronged strategy was adopted, viz. (i) crash training programmes; and (ii) long term development of training facilities.[22] The training programmes have been successful in that the Ministry of Health has been producing its own requirement of paramedics and auxiliary personnel from its own resources. A manpower study is necessary and this should include definite surveys of health needs and health care tasks required for computing "norms" and estimates of manpower requirements. This information is important especially for development projects to be operational as they are completed. In addition to basic training, several post-basic training courses had been conducted locally. The Public Health Institute trains public health nurses and health education officers, in addition to training doctors, sanitations and auxiliary nurses in various disciplines like epidermiology, food sanitation and family planning. The Institute of Medical Research which is the Primary Medical Research Centre in the country, is undertaking the training of medical laboratory technologists, junior laboratory assistants, clinical pathologists and medical scientists in Applied Parasitology and Entomology. The medical school of the University of Malaya also conducts degree courses in Public Health, Psychological Medicine and Pathology for doctors.

Service

Much has been said and written about the need for a reorientation of medical education to help students and teachers achieve a realistic outlook on social needs and objectives of the health care system. The need to use Field Training Areas (FTAs) to provide medical students with the required social experience to enable them to learn the Doctor's role in diagnosing community health problems and to practise being leaders of health teams has also been well documented.[23] The medical schools of Universiti Malaya and Universiti Kebangsaan use such FTAs at Kuala Langat District and Tanjung Karang District respectively. Participation of senior clinical teachers in the practice of the rural health centres is an example of contribution in the provision of direct service to the rural community. Unfortunately this is not a well-developed feature at the FTAs at the present moment, but it is considered that such participation would add considerably to the students' interest. It is also felt that this can act as a contribution to solve the problem of lack of willingness of doctors to practise in rural areas by relating such teaching at rural health centres very closely to medical schools and teaching

hospital departments.[24] In this way, not only will standards of practice at such centres be maintained at a high level, but the student will see his own clinical teachers functioning in this setting as well as in the hospital, thus enhancing his concept of the relevance and meaning of "medicine in the community" within the body of the medical curriculum.

The negligible contribution in the provision of direct service to rural areas as seen presently is not surprising since the urban-based teaching hospital is used as the main setting for teaching purposes. Besides, the medical schools do not have administrative control over the health centres in the FTAs thus raising the question of responsibility for services if provided by the staffs of the medical schools. Medical schools themselves are also short of staff as well as staff who are keen to do this. However, the FTA concept for community based teaching seems desirable for future expansion and the services rendered will, no doubt, benefit the rural population tremendously.

Conclusion

In concluding, it is needless to say that the goals of education, research, patient-care, and community medicine cannot be substituted one for the other. Though each helps the other, there is today a serious problem of emphasis and balance, within the context and relevance of appropriate health care and nation building.

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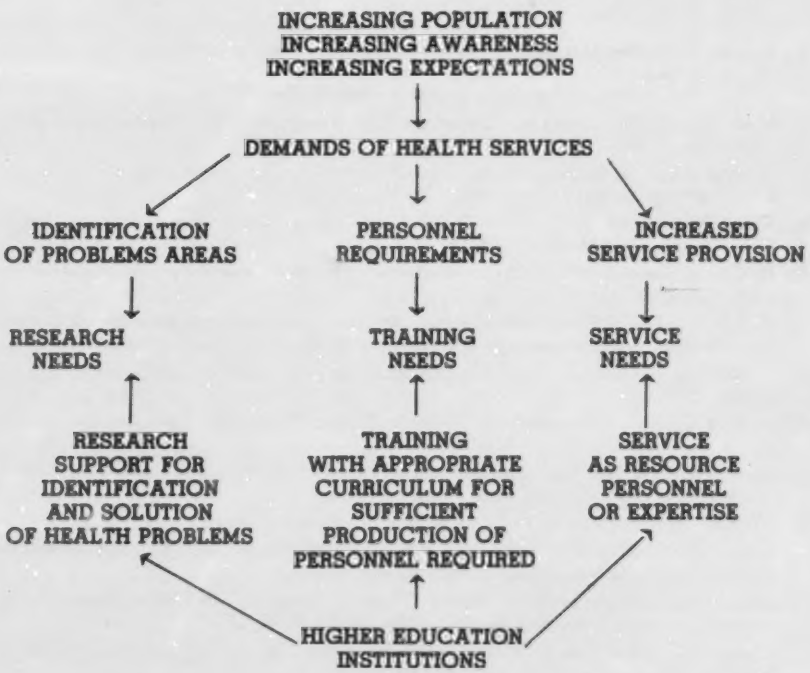
SUMMARY



PLANNING OF BASIC COMMUNITY SERVICES AND PRIMARY HEALTH CARE

Claudio Sepulveda Alvarez*

Introduction: APDI's* Experience

The satisfaction of basic needs [1,2,3] is an issue which has undergone a deep shift in approach in recent years. There is abundant literature but the essential fact remains to be community (people) participation in their own planning and implementation to satisfy these needs. In the following paragraph a brief discussion of the needs' concept and approach will be attempted, at least from the writer's viewpoint.

On the other hand, the United Nations Asian and Pacific Development Institute has for the past four years conducted Training Seminars oriented to senior and middle levels of the countries of the ESCAP region, on the delivery and development of community services, the latest of the series being the seminar on "Development of Basic Community Services through Primary Health Care", [4,5] which with UNICEF financial and manpower support and WHO assistance, was convened from 10 October to 24 November 1978. Twenty five participants representing 14 countries were present at that seminar.

The experience accumulated in the past years, in discussing and unfolding a learning process with government officials at the postgraduate level is partially reflected in section 4 below. Briefly, it could be summarized by stating that, to a large extent health professionals coming from senior and middle positions have not been exposed through their undergraduate studies to the basic social concepts and tools which will enable them to analyze, understand and act upon the social reality they have to face in a comparable manner with the exposure they have had with anatomy, physiology or pathology.

1. The Concepts

1.1 Human Needs[6]

The man-environment relationship underlying any human existence supposes a man-focused approach in order to weigh and qualify the situation. Looking at the repercussions on man of the environmental stimuli, it becomes apparent that man as an individual requires some generic *inputs* without which he cannot survive. Such generic inputs *are* the human needs. In other words, a basic need can be recognized when the environment impact on human beings weakens their situation eventually leading to death. Other

*Expert on Health and Social Development, U.N. Asian and Pacific Development Institute, Bangkok, Thailand.

*United Nations Asian and Pacific Development Institute, Bangkok, Thailand.

relationships and stimuli which do not endanger human or social existence should be considered as mere "wants". Social and community demand, however, would normally be a random mix of both "needs" and "wants".

It is interesting to note that at the basic level almost every need has a repercussion on health (see Table 1) and thus, it could be said that human health is the satisfaction of the biological and sociocultural stimuli exerted upon human beings as far as such stimuli endanger their equilibrium, the latter being considered as the higher rate of survival and compensatory ability conceivable for such persons, individually or collectively. It could also be stated that health exists when inputs have been adequately provided and processed and the end behaviour is a human one. Any stimuli or input which does not endanger the already defined equilibrium is not affecting health as such although it may affect the society and indirectly, health. Conversely, every alteration of such equilibrium is a sickness, affecting the individual or the collective level.

The described overview of human needs is already complex. Unfortunately, it refers only to a "normal" situation, that is the one where human beings are in an already healthy or steady position. However, when this position is one of ill health, new needs are developed. Therefore, we can talk about "normal needs" and "pathogenetic needs", the latter being the illness-originated needs. In a broad sense the latter could be summarized as recuperation and rehabilitation needs, since they require new inputs (medicines, care and generally speaking, treatment) and also the modification of the normal ones (for instance, diet is modified in an ill-health state). It must be stressed that such "pathogenetic needs" are also composed of biological and sociocultural aspects (including psychological ones). Thus, the following matrix could be attempted: (see Table 1).

TABLE 1: SOCIAL NEEDS

Human Needs / Human Living		NORMAL			PATHOGENETIC			
		Sociocultural			Recuperation		Rehabilitation	
		Biological	Psychology	Social	B	SC	B	SC
Individual								
Collective	Community							
	National							

The listing of specific "needs" to fill in the boxes of the matrix is a difficult undertaking. Through literature it is possible to find psychological approaches (different schools and concepts among them), sociological approaches, economical, cultural and physio-

TABLE 2: HUMAN NEEDS

BIOLOGICAL	SOCIOCULTURAL	
	ANALOGOUS	DERIVATED
1. *ENERGETIC SUPPLY AND DISTRIBUTION*	1.1 SUPPLY AND DISTRIBUTION	1.1.1 PRODUCTION-CULTURE
1.a Breathing (air)	1.1.a *Water supply*	1.1.2 DISTRIBUTION
1.b Drinking (water)	1.1.b *Foodstuffs*	1.1.3 EXCHANGES
1.c Nutrition (foodstuffs)	1.1.c Raw Materials	1.1.4 TRADE
etc.		1.1.5 MARKETING etc.
2. *ELIMINATION*	2.1 *GARBAGE — DISPOSAL*	2.1.1 *HYGIENE*
2.a Breathing (and Perspiration)	2.2 *SEWERAGE — DISPOSAL*	2.1.2 *PUBLIC HEALTH*
2.b Urine	2.3 *ENVIRONMENT POLLUTION CONTROL*	
2.c Stools etc.	etc.	etc.
3. *COMPLEXITY*	3.1 SOCIAL DIVISION OF LABOUR	3.1.1 PLANNING
3.a Cellular specialization	3.2 LEADERSHIP	3.2.1 AUTHORITY
3.b Aggregation	3.3 COOPERATION	3.2.2 LEGISLATION
3.c Coordination and Control	3.4 LANGUAGE (symbols)	3.3.1 ADMINISTRATION
3.d Communication		3.4.1 *EDUCATION*
etc.	etc.	3.4.2 *INFORMATION* etc.
4. *GROWTH AND DEVELOPMENT*	4.1 GROUP ORGANIZATION	4.1.1 SOCIALIZATION
4.a Addition		4.1.2 GROUP BELONGING
4.b Maturation	4.2 GROUP COORDINATION	4.1.3 HUMAN ASSOCIATION
4.c Evolution (broad sense) etc.	4.3 SOCIAL CHANGE etc.	
5. *SEXUALITY*	5.1 COUPLING PATTERNS	
6. *REACTION*	6.1 *CLOTHING*	6.1.1 *SOCIAL SECURITY*
6.a Mechanical Defenses	6.2 *SHELTER*	6.2.2 *HOUSING*
6.b Immunity	6.3 ORDER-INFORCEMENT	6.3.1 POLICE
6.c Cellular "police" etc.	6.4 *VECTOR-CONTROL* etc.	6.3.2 MILITARY INSTITUTIONS etc.
7. *MOVEMENT*	7.1 WORK (LABOUR)	7.1.1 EMPLOYMENT
		7.1.2 AIR
	7.2 MIGRATION etc.	etc.
8. *REST*	8.1 *RECREATION*	8.1.1 *SPORTS*
9. ALIMENTATION (only collective)	9.1 AGRICULTURE	9.1.1 HUMAN SETTLEMENT
		9.1.2 URBANIZATION
	9.2 LIVESTOCK etc.	etc.
10. REPRODUCTION (only collective)	10.1 FAMILY-SETTING	10.1.1 MARRIAGE RELATED—INSTITUTIONS
	10.2 GROUP—LIMITATION etc.	10.2.1 DECENTRALIZATION etc.
ETC.	ETC.	ETC.

1. The basical breakdown albeit deeply modified has been taken from the North American Anthropologist MALINOWSKI, Bronislaw, "A Theory of CULTURE".
2. HEALTH does not appear in the chart because it is the addition of every underlined "need", with the restrictions made explicit in the text.

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1971/11-1975/VIII-1976.

logical ones. Terminology is confusing: instincts, needs, desires, motives, requirements, wants, demands, etc. are often used with different and overlapping meanings. Not a "science of needs" has been developed. With no pretension on exhaustiveness or adequacy of the terminology, a list of "human needs" is provided in Table 1. Biological needs are *perhaps* self-limited. On the contrary, socio-cultural needs are always developing and evolving. Their originating mechanism cannot be discussed here. There is, however, one major issue to be kept in mind. Societal organization goes through grouping people together with the specific aim of satisfying one or several of these needs, or their expression through demands. In the process, a distinctive community pattern is adopted, specific problems arise and the pace of social activity, otherwise called Development unfold, either truly covering the scope of human and social needs or becoming strongly biased to some of them or, more often, covering them only for specific (privileged) groups of the said community.

1.2 Basic Needs

What are "basic needs" in the context of human and social needs? Recently ILO[7] has provided a widely accepted list, which however, may not be sufficient. The writer wishes to call attention on one major issue. Basic needs cannot be listed without reference to social organization. In other words, there are needs which will only appear when human beings are socially organized. This is, however, of capital importance because it is such an organization which will determine the satisfaction or otherwise of *both*, individual *and* collective needs.

In this context a modified list of Basic Needs will read as follows:

TABLE 3: BASIC NEEDS

	INDIVIDUAL	COLLECTIVE
Biological	Nutrition Health (equilibrium) Therapy	Sanitation
Psychological	Reward Group belonging	Social organization (grouping)
Socio-cultural	Work Education	Production Distribution Housing Communications Trade Energy and supplies

There are two basic issues to be discussed:

i) Consider "production" as a basic collective need. If it is not fulfilled, there is no way to, directly through the products e.g. medicinal plants or indirectly through trade and exchange e.g. crops/money/medicines, satisfy the need for therapy. In other words, basic needs are not only "services" needs but also "productive" ones.

ii) Basic Needs are a totality. They cannot be parted and dealt with separately. This has profound implications for operational action and the organization required to undertake it. It also stresses why the precise delimitation of Basic Needs is so important and has, somehow, yet to be found.

1.3 Basic Care

What is basic care then? Let us use the more restricted issue of basic health care as an example. First, there is a semantic problem. A 1973 WHO study[8] lists more than twenty terms to refer to Health Services, any of which could be considered as overlapping the others. In essence, all of them (we are talking before the appearance of Primary Health Care) refers to different degrees of *extension*, of (health) *specialized* services, *delivered* to the community through more or less *peripheral* (in relation to the administration) outposts manned *managed by* specialized people.

UNICEF Basic Services[9] approach offers a rather different perspective and a very explicit one. Services occur at the village or neighbourhood (no "outposts"), are *generated* by *non-specialists* in an *integrated* manner and as such could not be "peripheral". They are at the centre of the community's life. They are, however, services and would thereby only satisfy Basic Services Needs and not productive ones. This may prove to be the one self-limiting aspect of this approach.

Primary Health Care [10. 11. 12. 13], a concept/approach developed by WHO and UNICEF has tried to embody these two sets of concepts together, with the result that for some PHC is the successful *extension/delivery* of services *to* the grassroots and for others, it is the *generation* of such services *at* the community level.

In a way these are two different strategies to reach the same goal: to care for people. Whether it is *by* themselves or *through* specialized workers remains a choice determined by political and social realities. Basic care and basic health care along, is both the delivery *and* the generation of services in a mix which accepts any proportional participation even the exclusion of one term of the two strategies, *depending* on a proper assessment of the potentialities of each society and its structure. Whether in the long run one might be more creative and flexible than the other, is another dimension of the problem.

1.4 Primary Health Care and Community Services

Notwithstanding the above comment, the following characteristics of PHC seems to have special relevance in the context of developing countries with free enterprise or mixed economies and in some centrally planned (socialist) economies as well, with perhaps the exception of (2) below:

1. PHC is shaped around life patterns of the population.
2. PHC is an integral part of the national health system.
3. PHC is integrated with other sector activities like agriculture, education, public works, etc.
4. PHC has local population involvement.
5. PHC has reliance on available community resources.
6. PHC has integrated approach of preventive, promotive, curative and rehabilitative services.
7. PHC does health interventions at the most peripheral practicable level.

What is essential in this enumeration is both items (3) and (4), that is "sectoral" integration and population's (community, people) involvement.

1.4.1 Sectoral integration

In the process of organizing itself a community gets at least two levels of integration.

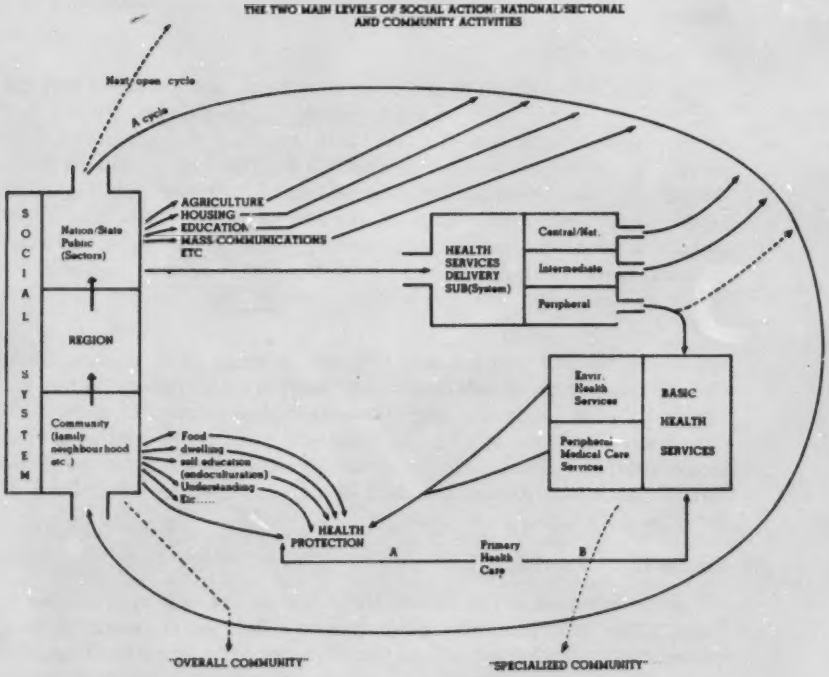
a) The local level, deeply rooted in biological linkages expressed through primary social groupments (e.g. the family) and likely based in an indifferentiated pattern of activity in which activities to satisfy every felt need are performed by the local community as a whole. There is no compartmentalization, no "technicians" as such and the community acts and reacts as a unit towards the fulfillment of objectives which are common to all members and are implemented by all members. There is an "overall community" approach which is what is normally referred to as the "*community level*" of development. In fact, integration is not the word, since there are no "parts", the community acts as a whole, at least subject wise.

b) The second level of integration of the society goes along quite different lines and stems out of the ever-increasing complexity of technologies, the institutionalization of power relationships between groups of the same community, etc. This is the *national level* which assembles within the boundaries of a geographical territory, a multitude of different local communities with their peculiarities, and attempts to provide satisfaction to their demands and needs. In this process, the focal points are not kinship and neighbourhood groupings accompanied by unspecificity of

the activities but precisely the opposite, that is, the focus becomes the type of activity. Every need, want or demand becomes the focus of a social group, a *"specialized community"* (for education, industry, agriculture, trade, health, etc.) which eventually will compose a "sector" of the economy. Secondary groupment on specialized basis has been substituted to primary groups. A social division of labour has replaced the integral approach to life.

However, this national integration relying on a societal division of labour does not preclude the functioning of the community level which will still seek to fulfill the same objectives the national sectors are organized for. In spite of Housing Ministries and Programmes, the community will continue the building of small houses and dwellings; no matter how Health Services are institutionalized, the community level will still have its own traditional practices and practitioners; no matter what educational system is deviced, basic skills and ways to approach life will be transferred from one generation to the other through the day-to-day system of social life (see Table 4).[14]

TABLE 4:
THE TWO MAIN LEVELS OF SOCIAL ACTION: NATIONAL/SECTORAL AND COMMUNITY ACTIVITIES



1.4.2 Community Participation

The nature of participation has been much discussed. In essence there is one basic goal of participation, namely, self-development by the very process of acting. In a way development could be compared to surgery: nobody becomes a surgeon without actually performing — and this means diagnosis, treatment's choice, decision, implementation, follow-up and evaluation — surgery. No community will, therein, develop without actually "performing" development, that is, the set of functions mentioned above.

Participation means thereby to assess, to choose alternatives for action, to decide, to act, to monitor, to look back to what has been achieved. Merely to act will not suffice to motivate and make responsibility and improvement, internalized objectives. Without the latter no self-sustained process of development will ever unfold.

There are constraints, namely, other community's priorities. So, participation will also mean to join efforts — and discard differences — to negotiate and turn drawbacks into assets.

2. Community Dimensions of Primary Health Care/Basic Community Services

2.1 Rural Communities

In Asia, 80 per cent of the population lives in rural areas and the number of villages runs easily into tens of thousands. Their basic activity is agriculture and their basic needs are often defined as nutrition, sanitation, education and roads. Therapy is seldom mentioned by the communities themselves but intestinal diseases, malaria and respiratory diseases are known to be widespread. The mother seems to concentrate many social roles as housewife, teacher, worker, etc. although her status and influence in decision-making seem to be secondary especially among Muslim communities.

The PHC/BCS approach seems then to focus on how to generate tens of thousands of self-sustained, partially self-reliant initiatives which will provide care to those in need, in a short spell of time, without privileges — except for the children, perhaps — and with adequate referral, should the need arise. How does the set of Basic Needs described in paragraph 1.2. get satisfied by what kind of services performed by whom?

2.2 Community Participation

As mentioned at the outset, the stress of the new approaches to Basic Care is community participation. But, what, exactly, is a community and what is participation? In practice, it is found that the academic characteristics for a community, namely: common objec-

tives, sense of belonging, interrelated roles originating a structure, matched by a geographical boundary is very weak, except on the latter account. The leaders of such a community will usually be the richest and will orient their demands (on behalf of the whole community) to what they perceive suiting best their own requirements. The poorest members will not have even time, busy earning a livelihood, to perform any role, will not sense they are important and will end with no voice, place or influence in the community's decision. Thus, the geographical boundary will become the strongest characteristic ... by default of the others.

The latter is important since it implies that participation is not leader's participation but community's participation. In the other hand, such an involvement requires to exert decision power as well as participate in the implementation of the decisions.

2.3 Articulation of Community Action and Administrative Hierarchies

Articulation means here to hand over a particular issue from one level, the community, to others, the different bureaucratic services and vice-versa. Such a process determines an interphase where the community is one but the sectors are many. It is then important that proper coordination is ensured and that the multiplicity of involved actors does not override the interests and priorities of the community itself.

2.4 Intersectoral Coordination

As mentioned above this coordination is essential and very difficult because each sector has specialized interests which are perceived as priorities in themselves. To work out a common set of priorities seems to be quite elusive. The most important single element in such a process is to recognize the community's views as the leading guideline where the different sectoral interests have to fall into place. This should not, however, lead to a process of lobbying community members and leaders in order to "sell" one or the other aspect.

2.5 Economic Production and Social Services

Basic care, however, depends from production and related functions. Although much conceptual discussion has taken place, the fact remains that services imply present consumption no matter what benefits, productive or otherwise may take place in the future. And present consumption — developmental, pleasant or wasteful — requires pre-existent production. If you cannot produce, socially speaking, you cannot consume, you cannot "care".

It is true that not all elements involved in the process of caring for people need to be "produced" in an economic sense, but all the same if production and related functions are not step up, services will reach a ceiling where it is unlikely that further improvement of

the quality of life will take place. There is more than one example in Asian societies where this relationship has been painfully proven.

Therein lies the need for considering Basic Needs as one package, encompassing productive and services aspects and not to stick to Basic Care, that is, services alone.

3. National Dimensions of PHC[11]

3.1 Delivery, Support and Generation

As described in paragraph 1.4.1 there are several levels of integration in a society.

The role of the state, the national level of integration is assumed to provide through its different Ministries-cum-Sectors, response to the different demands spelt out by the citizens of a country. To provide necessary resources for doing it so, the State is empowered to draw the cooperation of every citizen. However, at any point in time the state orients its action through the decision and enforcing capacity of those members of the society who control the power mechanisms and, therefore, the state action somewhat translates the like and dislikes of the holders of such a power, which may or may not be coincident with the needs and demands of the majority of the population. In fact, they have not, and in most developing countries, this has translated into urban — rich oriented services which do not "deliver" but to a very narrow sector of the population. In a way, the very concept of delivery may be quite binding since it denotes to reach from one level to another, from those that already have, to those that do not. In other words, it emphasizes the idea of progressive extension of the services, whose pace, we already know, is so slow that the toll to be paid is unacceptable.

If *delivery* is a selfbound strategy, the complementary alternative is *generation* by those that suffer from the problem. To deny such a right is both unethical and non-scientific since is denies the right to self-protection and the fact that once somebody knows about an issue which affects himself, he or she has not only the right but the duty to act upon*. So has a community, utilizing whatever resources it has at hand. First and foremost, its people and its culture which sets all that is needed for a process of generation of services which eventually will evolve, progress and strengthen, leading to the linkages with state/national services being delivered at other levels of integration.

This right and responsibility for community participation has to be *supported* by the State/Government not only because it is one of the duties it does have as representative of the national whole community but also because, without initiative and creativity a nation is bound to decline and disappear, thus triggering off a self-defeating process.

*A concept which is gratefully acknowledged to my colleague, Dr. Niranjan Mehta.

3.2 Planning and Logistics

Perhaps the two major implications of such supporting role for the national level are its capacity to plan, to reduce uncertainty, to make the future better than the present. This is so, because it encompasses the knowledge and experience the nation has acquired as a whole through thousands of mini or macroexperiences in different historical circumstances and with different actors. Such knowledge, such capacity has to reach back the communities.

Autarchy for a community is impossible. Therein supplies of essentials not available in a particular community have got to reach it. Here, the national level has again a most important role to perform, to make sure that appropriate inputs reach the right communities at the proper time. The latter means that proper distribution, allotment and supply have got to be ensured. Eventually procurement, through production, purchase or import may also fall into this heading.

3.3 Coverage

Only a supracommunity level, the national one or any of its sublevels, can ascertain that *all* communities are progressing well, are served with equity, have got proper coverage. And this is why different efforts may be called for to tackle different communities.

3.4 Intersectoriality

Linkages between different national organizations, public or private, are needed to avoid overlapping, waste, conflict that is unnecessary, etc. Such effort has to be undertaken by a powerful centre not biased, or at least not as biased as a given community may be when compared with others, or a particular sector could be when concern with its own objectives is at stake.

3.5 Development implications

The proper management of the issues outlined above will determine whether development — and not mere growth — is in progress, that is whether:

- quality of life of the poorest better of
- coverage of services extends
- creativity unfolds
- production increases
- variety and choice appears
- social and psychological reward is present

4. Implications of BCS/PHC for University Education in the Field of Health and Social Development

4.1 Social Technology

In spite of several decades of public health development it would seem that even today health is considered to be a biological field of

action. The enormous development of pathology and the microbiological explanation of so many diseases in the late 19th century coupled with the therapeutical developments of the post-war seem to have made such an impact in the health field that the collective dimension of Medicine has been consistently explained through quantity. In other words, to solve *social* health problems is a matter of killing *more* bacteria or utilizing *more antibiotics*. The *individual* solution is multiplied ad-infinitum without a thought for qualitative change of the cause-effect relationships, and made up to cope with social health problems. Even in non-bacterial cases, such as malnutrition, the response has been to organize massive distribution of food because, of course, if some one is in deficit such a measure should solve it. Does it?

The dimension which seems to have escaped many analyses is that society, and disease when looked in a social scale, have quite different causes and that the repetition of individual solutions, viz. medical ones, is not affordable at least, to get total coverage and thus, satisfy basic health needs of the majority.

If medical technology, individually and biologically rooted as it is can not cope with disease at social level, let alone health, what technology will? The answer seems to be now closer — social technology *and* medical knowledge complementing each other. But the answer is rather on the first than on the second term of the equation. It is important to recognize that the two more successful stories of improvement of collective health status in Asia — China and Vietnam[16.17.18.19] made this possible precisely because of this emphasis on peoples organization or social technology.

It is true that political issues are brought into the picture, which means the utilization of social power and resources in the pursuance of certain goals — like health — rather than others, like individual profit as restricted to narrow elites. But, today this is a fact and it is scientific to recognize it.

Primary health care could then be re-defined along these lines, that is, PHC is social technology plus medical knowledge. UNAPDI's experience, limited as it is show that this basic statement is seldom internalized by the senior and middle-level officers attending its courses and that partially this is the result of no or little attention devoted to Social Sciences at the undergraduate level.

These concepts, if accepted, have heavy implications for under graduate training in the field of health. If health is as much social as biological, then training in social sciences has to be present on an equal footing.

Still those social and cultural concepts brought into health curricula have got to be relevant not only to describe social reality but to understand it, trace cause — effect relationships and evaluate the potentialities of a given social configuration.

4.2 Development of Basic Social Sciences

If that is the case an urgent development of these disciplines is necessary. But what disciplines? It would be useless to only list them and even counterproductive. Sociologists, anthropologists, economists, political scientists have them all got the same biases and prejudices than any other professional group. It would be much more relevant to approach such a learning of social problems in a problem-oriented way, getting from each discipline its finest contribution.

It has to be stressed that we are not talking about social sciences in the health field such as medical anthropology or sociology, but about the real, purely sociocultural issues *without* application to any particular field, except the understanding of human society as a whole. There is no substitute for that, in the same way that society itself is only understandable as a whole and not by chapters. Sociologized disciplines are *also* interesting, even necessary but cannot compare with the importance that social sciences have per se.

The buildup of a sociocultural understanding of health and disease is also a process and cannot be squeezed in one semester or so. It has got to evolve very much as clinical sciences do. From a frame of basic sciences such as chemistry or physics, through Pre-Clinic Sciences such as Physiopathology and Semiology to Clinical Sciences and Therapeutics. Table 5 gives a comparative scheme of Social and Clinical Sciences at the undergraduate level.

4.3 Field-practice

In the same way that there is no substitute for a surgeon to be but to perform surgery, there is no substitute for a health professional but to be exposed to community and societal life. Through the years of undergraduate training sufficient exposure to the reality of community life in suburban and rural areas has to be present, the closer the better. The same applies to the understanding of bureaucracy and overall political processes though, it is true, such exposure may become considerably more difficult.

4.4 Recognition and Reward

Another issue which is important to keep in mind is that undergraduate training is also a socialization process in which the students identify themselves with persons (professors), achievements and the value-scale predominant in society. If the social aspects of health, if health is not recognized as being as important as Medicine, then students will tend to shy away from such disciplines and concentrate in those that are full of potential prestige, social status and more often than not, economic reward.

Universities have a duty to single out and back up the dimensions and implications of health, be it through importance accorded

TABLE 5: A SUMMARY OF HEALTH SCIENCES

Type of Science / Level	Social Sciences	Medical Sciences
Basic	Sociology Anthropology Economics	Chemistry Physics Biology Biochemistry
Pre-Clinic	Epidemiology Demography Political Science	Physiology Arcatomy and Histology Pharmacology Semiology Physiopathology
Clinic	Planning Administration	Therapeutics Clinical Disciplines: Internal Medicine Pediatrics Obstetrics Surgery Specialties

in the syllabi to these matters, special awards or any other means considered fit.

As long as the orientation of professionals working in health does not change to encompass a broad social perspective, there would be no real scope for unfolding the so called (in this paper) national dimensions of Primary Health Care, including planning, logistics and other support functions. If this in turn remains so, there will be no much hope to help communities to reach the WHO stated goal of health for all by the year 2000 (A.C.).

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CONTRIBUTIONS OF HIGHER EDUCATION IN MEETING THE BASIC HEALTH NEEDS IN RURAL AREAS: PROBLEMS AND PROSPECTS – CASE OF THAILAND

Kawee Tungsubutra*

It is a big problem in every developing country to deliver the health care to reach the people especially in the rural areas. There are severe maldistribution of doctors and nurses. They tend to stay in the capital or in large cities where they can earn more through their private practices and enjoy more comfortable lives. Those who work in the rural areas are mostly working in the provincial hospitals which are in the centre of the towns. There are only few doctors working at the district level and next to none or none beyond the district level. There are also other social and professional reasons which discourage the doctors from working in the rural areas, namely, lack of good school for their children, absence of supporting services and lack of continuing education for their profession, and absence of security for the doctors and their families.

Before going into any further detail a brief background information of Thailand should be described.

Population	:	42.7 million
Infant mortality rate	:	65 per 1,000/year
Crude birth rate	:	43 per 1,000/year
Rate of population growth	:	3.1 per cent per year
Per capita G.N.P.	:	$220

(All figures from 1976 World Population Data Sheet of the Population Reference Bureau, Washington D.C.)

Thailand 72 provinces are divided into 8-10 districts, each of which has 8-12 sub districts. Each sub district has 8-12 villages. In each province in the rural area there is a provincial hospital to handle the curative aspects of health care and an office of the chief medical officer to handle the preventive and promotive aspects.

At the district level, there is a maternity and child health centre and/or a district health station or district hospitals with a resident physician. Ideally or theoretically each district should have a district hospital staffed by a physician. But the fact is that out of 565 districts, there are only 252 district hospitals which have a physician practising in each of them, while the rest are staffed by nurses.

Subdistricts have health stations or maternity clinics which are staffed by health personnel with limited training, such as midwives or junior sanitation workers.

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*Dean, Faculty of Medicine, Khon Kaen University, Khon Kaen, Thailand.

Rural Health Needs

Close to 75 percent of the population live in about 50,000 villages in which there are no government health officials at all. For their health care, the people in these villages have to rely on old Thai medicine, quacks, or magic. Some pharmaceutical supplies are sold in village shops. The greater the distance of a village from a town, the less its health care system is developed.

Thailand has four medical schools which train between 350 and 400 doctors a year. The new graduates always choose to practise in a capital or in large towns rather than in rural areas where they feel isolated. Doctors are concentrated in the 84 provincial hospitals, each of which is staffed by 12 to 20 physicians. The result is a very poor distribution of doctors between the urban and rural areas. An additional problem is the loss of competent doctors to developed countries.

We at Faculty of Medicine, Khon Kaen University, distributed questionnaires about basic health needs to leaders of the communities according to the sociogram in the 16 provinces of the north-eastern part of Thailand. Furthermore we used the analysis of these questionnaires, supplemented by randomized direct interviews of the villagers as a guide for developing the curriculum for village health volunteers, and to design an operational research on the health care delivery system to reach more people.

Analysis of the responses showed that the people want, above all, someone nearby to consult with when they are ill, regardless of his or her level of competence. In reality there is little choice. Even though a villager may want to visit a doctor, it may not be possible because the distance is too great or the cost too high. As a result, the people continue to rely on old Thai medicine, and in some place it will take some time before they will accept a modern health care system. Three basic problems remain to be solved to overcome the health problem, and it is essential to solve them simultaneously as they are intimately bound in a vicious cycle: poverty, poor education, and poor health.

So far, the government has made no real effort to solve these problems, so we have submitted to the government four proposals that could be the beginning of the solution.

There should be a consulting hospital in the region to refer patients to, rather than sending them to the city, which is not practical and uneconomical. The provincial medical school should assume this role, and can do so, given a close cooperation with the Ministry of Public Health.

There should be some supporting services for the doctors who work at the district level by having vans sent from the medical school to visit every district hospital each morning to collect samples to be tested in the medical school's laboratories and return the results to the district hospitals on the following morning when the next day's samples are collected.

The same van would serve as the mobile lending library for medical personnel or bring x-ray film for consultation and return the film and the

interpretated results in the following morning. The government or the Ministry of Public Health should provide better incentives to doctors and nurses who work in rural areas, including assurances of good education for their children. Close cooperation between the Ministry of Public Health and the Faculty of Medicine in the region is required to promote a new concept in health care delivery.

Medical and Health Education

Questionnaires were sent to doctors working in each of the 16 provinces of the north-eastern region where Khon Kaen University is located and to provincial leaders. Based on the answers and other facts found by our staff members and new graduates from other medical schools in Thailand, we have altered the medical curriculum at Khon Kaen University in order to produce a physician who will serve the needs of the community, yet retain standards on a par with other medical schools in the country. The duration of medical education is to be kept to six years and post graduate study can be carried out either in Thailand or abroad.

Medical education in this country has traditionally been divided into three equal parts: two years each of premedical, preclinical and clinical training. In the rural provinces where a physician is expected to work alone after graduation in a district hospital, the emphasis in the medical curriculum has been changed to provide him with a solid clinical background. It includes one year premedical, two years preclinical, and three years clinical training. An internship of one year was instituted as in other medical schools.

Unnecessary detailed in-depth study of some subjects has been eliminated in reducing the premedical period to one year. Practical subjects, such as sociology, economics and psychology have been added to the curriculum, with special attention given to community medicine. Both the preclinical and clinical curriculum are integrated by giving a lump sum credit. This method will prevent the departments from going into much detail in subject irrelevant to medical students who trained for general practice. In the clinical period, only general medicine, general surgery, obstetrics, gynaecology, and paediatrics will be taught. Subspecialties will be taught concerning only the diseases common to the north-eastern region, such as parasitic infestation or tropical diseases, urinary stones, common skin diseases, anaemias, malnutrition, etc. Students will be offered a period for the subject they are most interested in, or that might be most useful (such as anaesthesiology or radiology), which they can, in turn, teach their staff when they are assigned to work alone in the district hospital. History of medicine, as well as medical ethics, are to be included in the curriculum with the aim of inducing a positive attitude in students toward the profession and the responsibility to the people and community.

Involvement of medical students in villages is encouraged after they have completed the premedical training. In the summer, first year medical students will visit villages near the university to study non-medical problems which the villagers are facing. Second year medical students will gather detailed health data in villages and try to find out whether there is any

correlation between the non-medical problems collected in the first year and the health problems found in the second year. Students will visit different villages every year and in time the Faculty of Medicine will acquire detailed health data on villages, which may be useful to future health planning. Third year medical students will be assigned to stay in remote villages for two weeks to advise villagers on improving environmental sanitation and participate in the improvement of the environment of the villages. During these two weeks, students will make a stool surveys under the supervision of Medical Faculty and will compare the differences between the findings of the remote villages and those which are close to town. The students will be trained to advise villagers on preventive and promotive aspects of health care when they are in villages during the community medicine period. This is meant to increase the villager's confidence in medical personnel and to increase the confidence of the students to become the head of the health team in the future. Students will be trained and allowed to work in district hospitals and provincial hospitals for a certain period during the last two years of the programme.

The recruitment of medical students to Khon Kaen University will favour local students. Students from north-eastern part of Thailand are handicapped in the secondary school because of the relative shortage of qualified and experienced teachers and of equipment and laboratories. If they were not given preference and had to compete with better schooled students from the capital city, only a small percentage of the local students would be able to get admitted to the medical school. Consequently, 60 percent of the places in the medical school of Khon Kaen University have been reserved for local students. The remaining 40 percent will be filled by students taking a competitive entrance examination and having interviews with psychiatrists and other medical personnel interested in selecting candidates with good attitudes toward rural people. The students have to sign contracts with the University agreeing to remain in the north-eastern region for three years after their graduation. Our first group of medical students will be graduated in 1978.

Village Health Workers

Since no qualified doctor will put up with the hardships and inconveniences of the remote areas, we have ensured that there will be some trained health personnel in these areas. We train a number of villagers as health volunteers. With the cooperation of the Ministry of Public Health, our Medical Faculty has set up a two week course to train these villagers. The curriculum, the period of training, the basic knowledge of the teachers and the selection of the trainees have been carefully discussed. Most of the criteria are based on the knowledge gained from the questionnaires and from visits to the villages.

The intention of this pilot project is to test both the feasibility and effectiveness of extension of health care system to rural populations by training indigenous village health workers. These health workers or volunteers will serve the rural population as part of a health team headed by a doctor. We

have evaluated the effectiveness of our village health volunteers by certain criteria before and after the implementation of the system. An independent evaluation conducted by a team of social scientists from the Faculty of Social Sciences, Mahidol University in Bangkok also confirm that favourable results were received by the people and community. We expect the village health workers to have the following capabilities:

1. to understand modes of infestation of common parasitic diseases including malaria, liver flukes, hook worm, round worm and tape worm;
2. to teach villagers to protect themselves from these diseases;
3. to give first aid treatment for malaria patients;
4. to understand and use the referral network for cases beyond their capabilities;
5. to treat simple diarrhoea, common cold, sore throat, and to make a simple dressing;
6. to give first aid treatment and use life-saving procedures;
7. to do a normal delivery of a baby in the area where a midwife is not available and to give family planning advice;
8. to understand simple nutrition and infant feeding;
9. to give advice to villagers about scabies, lice, and fungus infection of the skin.

We do not expect villagers to learn all these skills in two weeks but to assimilate as much as they can. We will assist them every three months by either teaching them in the villages or by recalling them every six months to study at the Faculty or both. We expect these villagers to master all the required skills within two years.

These villagers will serve their neighbours as unpaid volunteers at almost no cost to the government. The volunteers will continue to earn their living as farmers while serving as the basic health personnel in a health network.

Our training course for village health volunteers started in early February 1975 with the cooperation of the Ministry of Public Health and the Provincial Chief Medical Officer who lent us their facilities. We used one teacher for the in-service training of each group of five villagers. We have given all together 10 courses for about 570 villagers. After 1977, we have handed over the training of Village Health Volunteers to the Ministry of Public Health. We will now train the Village Health Volunteers only on special request.

Follow up and Supervision

We have avoided too close supervision of the village health volunteers because it would not help their training, and it would be impossible to do so anyway. However, we have assessed them frequently to prevent their doing more harm than good. Immediately after they finished their training, they will be handed over to the Provincial Chief Medical Officer, so that he will include these Village Health Workers into the health network. They will also be supervised by the district health officers and their staff. The staff of the

Faculty of Medicine will visit the village health volunteers together with the staff of the Provincial Chief Medical Officer. In this way, it will create a good human relationship between the staff of the two organizations and the village health volunteers. If there is good human relationship, there will be good co-operation. By field supervision and enrichment programmes to the Village Health Volunteers, we have created close contact with the Village Health Volunteers and have kept their morale and recognition good. They will learn not to endanger a patient's life by their own ignorance, and to refer the patients who are beyond their capabilities to the district hospital or to the provincial hospital or to the Faculty of Medicine's Hospital. During field visit and the enrichment programme, an evaluation of the basic health worker's progress can be gained from first-hand observation. We have arranged a course for the health officers in selected subdistrict health station to be trained with the village health volunteer so that they may have known each other and the health officers will act as close supervisor in the field.

Evaluation of Village Health Workers

Individual village health workers have been evaluated every year through the analysis of questionnaires sent to the people in the area where they are working. This will be supplemented by personal visit of the staff of the project on community medicine and the information from all persons in the office of the Provincial Chief Medical Officer.

An independant evaluation was done by a team of social scientists from the Faculty of Social Sciences, Mahidol University. The results reported by them confirmed our findings that these village health workers are doing good to the people and help the government in the delivery of primary health care. The details of this report will be published soon.

Prospects

The first group of medical students will graduate at the end of this academic year (1978). They will have to be evaluated by a Committee from the General Medical Council. Whether they will show the capabilities and attitudes according to our objectives or not remains to be seen. There is a lot of criticisms from those who are in Bangkok that our products will have the basic knowledge below standard in comparison with those from other medical school. But these are only speculations without any actual or scientific proofs. Anyhow it has been roughly shown that our final year students have more clinical confidence and skill than those from other medical schools. We admit that our students may have less knowledge in the premedical sciences which is not of much concern in the medical practice. The knowledge in the preclinical subjects should not be less than in other medical schools because we require two years for learning, the same as in other medical schools. The disadvantage of our medical school, in comparison with other medical schools is, we have less experienced and younger staff members. This cannot be helped. The more experienced professors in the older medical school are not willing to teach in a new rural medical school like ours. At any rate, we believe in continuing education. If we have given sufficient basic knowledge to our students as basic to their continuing

education, we feel that they will obtain additional knowledge by themselves. The cognitive part of education can be gained by self-teaching. The psychomotor part can, however, only be gained by training under the supervision of a teacher or a trainer.

Our village health volunteers are serving the basic health needs of the people in the rural area inspite of rumours of those who have professional jealousy. We are well aware of the danger that some village health volunteers may overdo. If we keep following up supervision and always give them the convenience of referring their patients, they will never do any harm to the patients.

An institution of higher learning such as Faculty of Medicine can contribute a lot in meeting basic health needs in the rural areas if it is willing to do so. The results of evaluation of our village health volunteers have been satisfactory and encouraging.

SUMMARY

"Contributions of Higher Education in Meeting Basic Health Needs in Rural Areas: Problems and Prospects — Case of Thailand".

Problems

1. Mal-distribution of doctors
   population : urban : rural 20% : 30%
   doctors : urban : rural 75% : 25%
2. Doctors remain in the central area
   few in the peripheral area.
   Next to none doctor beyond the district level, No incentive, No security, No education for their children, No continuous education, Lacking of supporting services.
3. Doctors' attitude towards the responsibility to people and community is inadequate.
4. No experience in tackling the preventive and promotive problems in the rural area.
5. Inadequate clinical experience and inadequate psychomotor training.
6. No experience of team work in the health care delivery to reach the people.
7. Insufficient number of trained health personnel to deliver primary health care to the people in the subdistrict and village levels.

Contributions

1. Identify the rural health needs by questionnaires and direct interviews.
2. Rearrange and redesign the medical curriculum to serve the needs of the people and the community.
3. Early exposure of the medical students to people and community.
4. Design the curriculum to be "problem oriented" rather than "scientific oriented".

5. Fill the gap through close cooperation with the Ministry of Public Health and the Provincial Chief Medical Officer.
6. Supply the supporting services and continuing education to the doctors working at the district level.
7. Design the curriculum to train Village Health Volunteers and train them according to the needs of the rural people.
8. Build up a strong and continuous health network and referral system.

Prospects

1. The doctors produced by the new curriculum remain to be evaluated in the future.
2. The village health volunteers have been evaluated by us and an independent evaluation by a group of social scientists who concur that they serve the primary health care to the people according to the objectives.
3. The prospects remain good so long as there is good co-operation and understanding between the Ministry of Public Health, the Provincial Chief Medical Officer and the Faculty of Medicine.
4. The prospects will be bad if it is imitated in a wrong way and will be destroyed by misunderstanding and professional jealousy.

DISCUSSION

The discussants were: Dr. Sunoto, Prof. Dr. Okas Balankura, Dr. M.K. Rajakumar and Dr. Raymond Lasserre.

The essence of the discussion is summarized below:

Dr. Sunoto began by giving what he considers to be the three common problems of primary health care underlying the papers presented. First of all, health facilities and services provided by the Government have yet to make a significant impact on the community despite the fact that efforts have been made to develop primary health care. Secondly, there remains a divergence between what is taught in the Medical School and the health needs of the community. Thirdly, there is the problem of maldistribution of doctors resulting in a disproportionate concentration of doctors in the urban areas.

To explain why the provision of basic health needs in the rural areas continues to meet with problems, Dr. Sunoto suggests that the planning of health needs tends to over-emphasize infra-structural needs such as the construction of buildings and hospitals. Lesser efforts are made to understand traditional beliefs and behaviour as they relate to medical practice in the Medical Schools. He feels that there must be efforts made to educate and organize the target communities to be responsible for their health needs. The fact that rural communities are located far from centres of health coupled with psychological and social inhibitions have prevented many from utilizing health facilities made available.

On the question of university curriculum, Dr. Sunoto feels that it is largely hospital-oriented rather than community-oriented. The stress is on the use of high medical technology. Consequently, medical training tends to neglect the socio-cultural aspects, such as for example, traditional beliefs pertaining to health and the treatment of diseases. Adequate attention should therefore be given to research and the use of appropriate technology with the community as reference.

On the problem of maldistribution of doctors, Dr. Sunoto feels that if certain provisions are made it might be possible to overcome the shortage of doctors in the rural areas. Among them he suggests: better working facilities; raising the income level of government doctors in the rural areas; providing adequate education facilities for children of doctors serving in rural areas; giving better recreational facilities for rural doctors; and through a system of selection and assignment have doctors serve in areas from which they have originated.

In concluding, he suggests that any Health Development Programme must be an integral part of rural development. Also in implementing rural upliftment programmes, full use should be made of traditional institutional practices and structures such as mutual help and consensus through consultation as it is the case in Indonesia.

Prof. Dr. Okas Balankura in his response to Dr. Sumarto's paper expresses his agreement with the need to orientate medical students to

meeting community health needs. He feels that co-operation between the Medical School and the Government Health Department is absolutely important. In addition, he emphasizes that co-operation and involvement of the villagers in the primary health care system is no less important.

On the question of medical students and doctors acting as change agents in the rural areas, Prof. Okas cautions the need for such persons to be conversant with the life, culture and environment of the rural communities among whom they work.

Referring to Dr. Molly Cheah's paper, Prof. Okas makes the same point viz., that in order to orientate both medical students and staff to meeting rural health needs, it is necessary to ensure that they have acquired a familiarity with the community where they will work. He is in agreement with Dr. Cheah that there is a role in the rural health scheme for traditional healers but they need to be upgraded. There is also a need for them to be properly integrated with governmental efforts to train medical personnel to work in the rural areas.

Turning to the paper by Dr. Alvarez, Prof. Okas concurs that there must be firm links between the community receiving primary health care and the medical institution. However, he suggests that the two must exist in equal partnership with each other. The role of the government is also vital as it makes possible the provision of basic infra-structural facilities in the primary health delivery system.

Dr. Rajakumar in offering his views is of the opinion that both the Thai and Indonesian papers complement each other. Referring to the suggestion that there should be a restructuring of the medical education system to meet primary health needs, Dr. Rajakumar cautions the need for further and careful consideration before undertaking it since faculty members are not quite familiar with rural values and attitudes toward health.

On the point made earlier that medical students act as change agents in the rural areas, Dr. Rajakumar feels that there is an inherent incompatibility existing viz., that the life style of medical students are not the same as that of the rural people.

Referring to Dr. Molly Cheah's paper, Dr. Rajakumar doubts that Medical Schools are able to provide adequate models for undergraduates in primary health development. He raises several inter-related questions viz., Can undergraduate curricula alone determine student behaviour? Will the re-structured method of medical education stressing basic health needs (as in the case of Indonesia) really leave a permanent effect on undergraduate attitudes?

Reacting to Dr. Sepulveda Alvarez's paper, Dr. Rajakumar concurs that primary health care is a marriage between social technology and medical knowledge. However, he expresses some reservation in this respect because frequently elites in the society distort social reality in order to maintain their vested interests hence defeating attempts at promoting public health care.

Dr. Lasserre in his response to the papers makes first of all a general comment. He explains that the practice of medicine has now moved from an

essentially individual oriented one stressing cure and rehabilitation to that of a community oriented one. This shift in focus has led to the concern for more mundane health needs. His specific remark centres on the lack of and the need for the collection of reliable and adequate epidemiological data. Rural health needs should therefore correlate with discoverable changes of epidemiology in Southeast Asia. On the subject of traditional healers, Dr. Lasserre cites the example of Bali where a project has been launched to upgrade rural healers by providing a one week intensive training course with government support. Such a programme of upliftment is difficult to evaluate though some impact may be felt in the areas of medical care and hygiene.

Further views and queries are summarized as follows:

Dr. Sumarto in responding, agrees with Dr. Sunoto that a system of primary health care delivery requires governmental support in order to be successful. He points to the fact that universities themselves cannot operate effectively without Governmental support.

In answer to Prof. Okas, Dr. Sumarto agrees that faculty participation in rural health schemes requires a good familiarity with the conditions obtaining in the rural areas. However, he feels that faculty members and students do learn a great deal together to enable them to work effectively as a team. He is also in agreement regarding the need to involve the villages in planning primary health care for them. On the subject of students acting as change agents, he is of the opinion that it is an important institutional objective to promote while he accepts the fact that it is not likely to be easy since students on graduation in particular are expected to play a multi-dimensional role as managers, doctors, politicians, etc. The essential approach adopted is to identify the problem, make an evaluation of it and then adopt appropriate action to meet it.

On the question of student life style as being different, Dr. Sumarto explains that experience shows that generally students are dedicated and show willingness to serve in the rural areas.

In concluding, he mentions that efforts are now being made to collect epidemiological data.

In her reply Dr. Molly Cheah makes two points. She says that the practice of traditional medicine is widespread both in the urban and rural areas of Malaysia. There is a need therefore to initiate more research into this aspect of medicine with a view to evaluating the contribution that traditional healers may make to basic health needs. She stresses the need to be selective and differentiated between healthful and harmful practices relating to traditional medicine.

Turning to the subject of medical training, she explains that while there has been some discussion in Malaysia to review the curriculum of the Medical Schools with a view to integrating the teaching of basic health needs, not much by way of substantial restructuring have been made. She suggests that perhaps there is a possibility of assigning doctors to the rural areas during the period of their internship. Also, she concludes, that a system of Government incentives may also help in this respect.

In response to a comment made of his paper, Dr. Sepulveda Alvarez explains that health is a social reality rather than psychobiological. Rural health is the business of many disciplines and organizations. The solution to the problem of rural health is not to change the approaches already adopted but to integrate them if they are not already so. On the query about social technology, Dr. Alvarez explains that it has to do with social organization. People must feel that they are actively involved in the planning and implementation of health programmes. Participation he stresses is basic and there is a need to involve all relevant disciplines in the health profession.

PART III

DELIVERY OF PRIMARY HEALTH CARE IN URBAN AREAS: ROLE OF TERTIARY INSTITUTIONS

THE ROLE OF TERTIARY INSTITUTION IN DELIVERY OF PRIMARY HEALTH CARE IN URBAN AREAS, PARTICULARLY IN REFERENCE TO DIARRHOEAL DISEASE

Sunoto*

Introduction

Indonesia is an archipelago consisting of more than 3,000 islands with the area of 1,904,345 square kilometers. The population in 1979, after the Second Five Year Development Plan, will be about 145 million of which 82.6 per cent or 120 million live in rural areas and only 17.4 per cent or 25 million in urban areas and 43.2 per cent or 63 million are children under 14 years of age.

The density of the population is about 63 per square kilometers, however, more than 50 per cent of the total population live in the islands of Java and Bali, where the density is about 600 persons per square kilometers.

The crude birth rate is 45 per 1,000 and crude death rate 19 per 1,000 with net population growth of 2.6 per cent (Central Bureau Statistic, 1978).

Health Facilities and Personnel

The number of hospitals in Indonesia is around 935 (government and non-government) with bed availability of 80,000 or 53 per 100,000 population.

There are five types of government hospitals available, and these are classified as follows (Subekti, 1978):

1. *Type A Hospital*
   in which there are all kinds of specialist-and subspecialist facilities.
2. *Type B Hospital*
   in which there are all kinds of specialist facilities but smaller than type A. This type of hospitals is located in the Province of Java and some Provinces outside Java.
3. *Type C Hospital*

   in which there are only 4 specialists, i.e. 1 paediatrician, 1 surgeon, 1 internist and 1 obstetrician & gynaecologist.
4. *Type D Hospital*

   in which there are no specialist facilities at all, but just general practitioner.
5. *Type E Hospital*

   besides the aforementioned hospitals there are special hospitals for certain diseases, such as for Leprosy, Tuberculosis, Mental Health, Eye Disease, etc.

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*Lecturer, Department of Child Health, Medical School, Universitas Indonesia, Jakarta, Indonesia.

The number of Health Centres (HC) is around 4,300 or 1 HC for 50,000 population. There are 10,500 physicians or 1 doctor per 14,000 population, 320 paediatricians or 1 paediatrician per 45,000 population; whereas the number of midwives is 15,800 and nurses 16,800 (Subagyo Martodipuro, 1978).

The health budget during the Second Five Year Development Plan, compared to the national budget, is 4 per cent only.

Paediatric Problem

From the current available statistical data we can see that the crude death rate and infant mortality rate are still high, respectively 19 per cent and 110 per cent (Subekti, 1978).

A study of 4,732 deaths in Jakarta (Pundarika and Sulianti Saroso, 1972) revealed that 63.1 per cent of the total numbers of diseases was due to infectious and parasitic diseases, whereas 70 per cent of deaths recorded was attributable to infectious diseases.

Analysis from Health Centers' data showed that the most frequent diseases are upper respiratory tract infection (UPTI), skin diseases, acute low respiratory diseases and diarrhoeal diseases; whereas a hospital records' survey showed that the five leading diseases are URTI, gastroenteritis, PEM, Tbc. and Vit A deficiency.

The highest proportional rate per 100 admissions was due to gastroenteritis i.e. 20-30 per cent (Sunoto, *et al.*, 1977). From the household survey carried out by the Ministry of Health (Pundarika and Sulianti Saroso, 1972) regarding the utilization of treatment facilities it was revealed that 40-50 per cent of the people did not seek treatment except in the case of *diarrhoeal disease*. Seventy percent of the patients suffering from diarrhoeal disease were mostly children under 5 years of age. This fact gives a hope that people would respond very well when a diarrhoeal disease control programme would be initiated.

Based on these data, the Directorate General of Communicable Disease Control of the Ministry of Health has submitted a *Rehydration Programme* for treating cholera and other diarrhoeal diseases' patients in the Second Five Year Development Plan.

The Role of The University and Medical School in The Rehydration Programme

To combat diarrhoeal diseases and other infectious diseases in developing countries is not an easy task, since there are many factors which can play a role such as socio-economic conditions, life-style of the people, belief, ignorance, environmental sanitation, personal hygiene, population explosion, etc.

In this context, a collaborative work between one or more government institutions and private or professional organizations—which are dealing with these diseases — are absolutely needed. This was the impetus that in 1974 the

First National Seminar on Rehydration was held with sponsorship by the Directorate General of Communicable Disease Control of the Ministry of Health, the Department of Child Health, Medical School University of Indonesia and the Coordinating Board of the Indonesian Paediatric Gastroenterology.

This meeting was attended by paediatricians of the Government and Private Medical Schools/Hospitals, doctors of the Directorate General of the Communicable Disease Control of the Ministry of Health from all the provinces in Indonesia who are responsible for the diarrhoeal diseases in their daily work.

This was then followed by Rehydration Course in every Province sponsored by the Provincial Medical School and Provincial Inspector of Health, so that after two years (1974-1976) a National Rehydration Programme has already become nation-wide.

The purpose of this Seminar was:

1. to provide supervision and instructions of the provinces in the programme of rehydration
2. to prepare and standardize the realization of the rehydration programme
3. to provide recommendations to the government concerning the implementation of the programme.

Considering the purpose and the results of the Seminar, it is clear how extremely important such collaborative work between the universities, public health workers (Ministry of Health) and the professional organizations is (Suharyono, 1978).

Such collaboration is now being extended with other fields of diseases such as Tuberculosis Control Programme, Dengue Haemorrhagic Fever, Liver Diseases, Nutritional Problems, Mental Health, Parasitic disorders, etc.

Several symposia or seminars concerning the above topics were already done involving multi-discipline institutions and private organization.

Given the aforementioned circumstances, the curriculum of post-graduate and undergraduate training should be changed and especially adapted to the basic health needs.

There are three main functions of the University in Indonesia, i.e.
1. Teaching
2. Research and
3. Service (Community Outreach Service).

Regarding these three functions in the field of diarrhoeal disease control, we will describe a schedule as follows:

1. *Teaching*

This is really the main function of the University. Every staff member of the Medical School of the University in Indonesia should be able to

teach and transfer his knowledge, skill and attitude to other people too, and then this new student could act also as teacher so that his knowledge could reach the community (family or mother). So, it could be said that the staff member of the Medical School is a "teacher of teachers".

The scheme of this teaching could be categorized into:

Direct:
1.1 Postgraduate Education
1.2 Undergraduate Education

Indirect:
1.3 Paramedical and Auxiliary training
1.4 Home visitor training
1.5 Community leader training
1.6 Family/mother training.

1.1 *Postgraduate Education (specialist)*

It is already realized and accepted world-wide that the purpose of the postgraduate and undergraduate education should be changed from hospital-oriented to community-oriented.

Specialists, particularly paediatricians, internists, obstetricians and gynaecologists and surgeons, after having finished this education, should work in the type C Hospital (district hospital). As a specialist in this district, he should be able to act as a consultant, teacher, supervisor, researcher, manager and member of the team (Moeljono Trastotenojo, 1978).

As a teacher he should be able to teach other people, either they are general practitioners, paramedical personnel, auxiliaries, home visitors, community leaders and family or mothers.

Speaking of paediatricians, it is realized that the number of paediatricians in Indonesia is still about 320 for 145 million population, and almost all of them are located in the big and small cities, none are working in the village or health center.

But, indigenous paediatricians are more than 20 million. Who are they? *They are mothers*! Because mothers always decide and treat their children or their family when they are sick. So it is our intention how to teach them, how to transfer our knowledge and skill in the simple way to them, so that they can treat their children accurately when they are needed. This does not need a sophisticated or modern technology, but it should simply use the appropriate technology which is now available.

1.2 *Undergraduate Education*

As mentioned above, the trend of teaching in the Medical School should be changed from hospital-oriented to community-oriented, so that young doctors—after having finished their medical education work independently in the villages or rural areas — are now supposed to know already what their job is and how to do it.

The knowledge taught during their medical education — beside the basic, pre-clinic and clinical knowledge — should also include the socio-anthropological or socio-cultural knowledge in their country. Because every country and even every villages or areas have sometimes their own life style, habit, belief and mystic.

For example:

- In Java ancient people believe that diarrhoea is a sign of growth and development (e.g. growth of teeth, to walk, to talk, etc.).
- In certain villages people have no private water closets; they instead prefer to defecate in the garden (they use their stool as fertilizer), in the pond or small lake (to feed their fishes) or in the river which serves as a community's water closet.
- A lot of those people also think, that giving meat to children for food, will cause worm-disease.

Therefore, it is not easy to change the habit or life style of the people in a short period. It will last for a long time, and only through careful health education, which is acceptable by them, this life style can be changed. It is advisable that young doctors must know this habit of the people, before they are going to start their work in the areas which are new to them. Otherwise they will fail.

1.3 *Paramedical Personnel, Midwives and Auxiliaries*

The relationship between people and paramedical personnel is closer than with the doctors. It could be understood because this paramedical personnel live and work among them. They travel from one village to another, so that they know exactly the problem of the community. It is easier for the people to ask their help than to the doctors, because (besides cheaper payment) the people are not so afraid or ashamed to tell their complaints or disease than to the doctors. For this reason, paramedical personnel are trained the knowledge concerning diarrhoeal diseases including the etiology, diagnosis, data collection, oral rehydration, refeeding, etc. They should be able to train other people and supervise at lower level.

1.4 *Home Visitor, Village Health Worker, Social Worker, Family Planning Field Worker*

These groups of persons should be trained how to recognize PEM, parasites diseases, good dietary feeding (breast feeding, weaning food) and how to treat diarrhoeal diseases in a simple way (oral rehydration, sugar-salt water).

They should be able to teach also the family on preventive measures and home therapy (sugar-salt water).

In preforming their duty, they should also carry several packages of oralytes for treating diarrhoeal patients if they find such cases.

Besides, they should be able to collect data on the incidence, conditions and practices affecting gastrointestinal disease.

1.5 *Community Leader*

This group has more strong power in making decision or influence the community than the aforementioned people; and people will always obey what they say.

So, in combatting diarrhoeal diseases their capacity should be used as maximal as possible. We should teach them how to recognize and change environmental determinants of gastrointestinal disease, to support awareness of the treatment program and community actions and collect local data on diarrhoea, well, etc.

1.6 *Family/Mother*

The last but the most important people in treating and preventing diarrhoeal disease are the families, especially mothers! *Diarrhoeal therapy should begin at home*! (Rohde, 1977). We should teach them how to recognize and initiate treatment for diarrhoea by simple method such as oral-glucose electrolyte solution, sugar-salt water, unripe coconut water and other available local resources and when they need further help. They should understand also the environmental determents of gastrointestinal disease and act to improve personnel hygiene, food diet, water use and sanitations.

If diarrhoeal disease is already recognized and treatment started at home, there will be no problem anymore regarding the diarrhoeal disease. The morbidity and mortality of diarrhoeal disease in the Health Center and Hospital will dramatically decrease, though the morbidity in the community is still high. People need not be afraid anymore of diarrhoea because diarrhoea is not a frightening disease anymore.

2. *Research*

Planning of the Research should be done for the benefit of the people. For the time being appropriate research with appropriate technology is more desirable than basic research with sophisticated technology, although the latest is undoubtedly very important.

During the workshop of Health Research and Development held by the Ministry of Health and attended by many participants from Medical Schools of the University in Indonesia, one of the recommended research is concerning diarrhoeal disease. This suggestion is divided into 3 groups of topics, i.e.:

2.1 *Identification of Topics for Research in Oral Rehydration*

a. Studies on the feasibility, acceptability and effectiveness of oral rehydration in urban and rural communities, through the basic health workers and mothers.
b. Studies to determine whether sucrose can be used instead of glucose in oral fluid hydration.

c. Studies of the effect of oral fluid therapy on the nutritional status.
d. Oral glucose electrolytes mixture for neonatal diarrhoea.
e. Studies on the various measures of glasses, bottles and teaspoons in the community.
f. Studies on the use of plastic scoops and standard volume containers.
g. Studies the effectiveness of oral rehydration in the communities without supervision of the health workers.
h. Comparative study on the effect of oral therapy in breastfed versus artificial-fed children.
i. Effectiveness of oral rehydration in rotavirus gastroenteritis.

2.2 *Research Topics for Epidemiological Studies of Diarrhoeal Diseases*

a. Comprehensive studies in different communities for identification of the prevailing aetiological agents.
b. Age specific attack rate of diarrhoeal disease.
c. Breast feeding, mixed feeding and artificial feeding in relation to the incidence of diarrhoea in the community.
d. Evaluation of the impact of different sanitary measures on the incidence of diarrhoeal disease.
e. Socio-anthropological or socio-cultural studies regarding attitudes and practices in diarrhoeal disease.
f. Family and community studies on the routes of transmission of rotavirus gastroenteritis.

2.3 *Other Relevant Research*

a. Development of simpler media for identification of enteropathogen.
b. Development of simple and widely applicable methods to improve environmental sanitation.
c. Mechanism of immunity in enteric infection.
d. Development of a simpler technique for the diagnosis of E.coli and rotavirus gastroenteritis.
e. Nutritional status of the host and its significance in diarrhoea and malabsorption state.
f. Development of a polyvaccin for diarrhoea.

Besides this topics, also discussed *how*, *who* and *where* those above studies could be done according to the availability of the facilities.

3. *Service (Community Outreach Service)*

The major objective of outreach to reduce the incidence of diarrhoea morbidity and mortality is to understand and to change the life style of the people which is related to diarrhoea. How people live, their views, beliefs and practices are the focus of this outreach.

Our services must be designed to fit within the cultural context, to meet felt needs as well as "real" and to capitalize maximally on existing proven methods of effecting life style of the villagers.

There are four categories where major efforts should be initiated or strengthened:

3.1 Need better understanding of practices and beliefs and what determine these. Although we are all aware of failures in clean water, latrine and other programs we do not understand the determinants of these failures. Particular attention should be paid to useful beliefs (Guava leaves or jambu and starch water for treating diarrhoea) as foundation : on which to build action program. The identification and reinforcement of positive useful life styles may be most effective in eliminating harmful practices. Our approach must be objective and sympathetics.

3.2 Better training aimed at phragmatic knowledge, simple skills and a strong confidence in all levels of health workers that *death due to diarrhoea need not to occur*. Our suggestions are:

a. Doctors must receive clear uncomplicated didactic training as undergraduates, especially in paediatric course on simple principle of rehydration. They should also be taught *how* to teach others as these will become their major job.
b. Paramedical curricula should have simple guides and emphasize experience on rehydration. These should be particularly directed towards house and clinic procedures and emphasize the role of the mother.
c. Family Planning Field workers should be involved in the outreach system. Equip them with a brief guide perhaps with colorful illustrations, several packets of oralyte or a special measuring spoon in their job to reach every home.
d. Indigenous practitioners or local healers should be taught a simple method of rehydration and provided with necessary guides, materials and assurance of back-up for referred severe cases. These people should be brought on the "health team".

3.3 *Information Transfer*. Much greater use of effective media must be used to deliver simple messages. We should study carefully successful sales campaigns and utilize similar procedures to "sell" rehydration and sanitation, such as : e.g. breast milk is no. 1 in the world! (as Eveready Battery-campaign). Whoever, Whenever and Wherever if suffered from diarrhoea drink oralyte! (as Coca-cola campaign).

- Medical journals (J. of the Indonesian Medical Association, Journal of the Indonesian Paediatric Association, J. of Indonesian General Practitioners, J. of the Medical Students, etc.).
- Popular or semi-scientific articles in the family journal, woman's journal, newspaper, etc.
- Radio spots, TV spots, play (tonnils), etc.
- Advertisement in the movie theatres, puppet play, clown, etc.
- Primary schools provide the greatest resources for education of mothers through their children. Simple curricula need to be provided all teachers and colourful poster of rehydration principles areas needed.

- Religious groups (e.g. breast feeding in Indonesia encourage by Minister of Religion).
- Volunteers agencies should be asked to join this campaign.
- Market place — advertising rehydration as new existing product in tradition way.

3.4 Technology must be appropriate, simple, cheap and universal.

a. *Oral glucose electrolyte mixture.*
   - commercial drugs
   - traditional drugs (herbs).

b. *Home or local mixture.*
   - Sucrose salt mixture in home is the ideal technology where acceptable.
   - Brown sugar, palm sugar (gula Jawa) and regular salt.
   - Plastic spoon — a standard measure and a teaching tool.
   - Adapt to local technology and belief (e.g. add sugar and salt to guava leaf tea or herbs).

In conclusion, it is realized that information is a crucial element. We need to know more about beliefs, practices and why they are done. We must design a campaign that is simple, targetted, repetitive and universal reaching from the medical college hospital into every home.

Paediatric societies should take on this task and mobilize the wide resources available to do the job in each country.

The Role of Professional Organisation as a Potential Resources

In combating the diarrhoeal disease, besides collaborative work between inter-departmental institutions, several professional organisation should be involved. They are, for example:

- Indonesian Medical Association
- Indonesian Paediatric Association
- Coordinating Board of Indonesian Paediatric Gastroenterology (CB-IPG)
- Woman's Organisation
- Indonesian Welfare Foundation
- Indonesian Association of Obstetrician and Gynaecologists
- Indonesian Doctors Wife's Association
- Indonesian Midwife Association
- Etc.

As already mentioned, before 1974 there was no national Rehydration Programme yet in Indonesia. After the First National Seminar on Rehydration which were sponsored by Ministry of Health, Medical School University of Indonesia, Indonesian Paediatric Association and Coordinating Board of Indonesian Paediatric Gastroenterology, a standardized treatment of diarrhoeal disease for the whole Indonesian could be done.

It could be mentioned here that in this case the CB-IPG plays a very important role.

During the four years five meetings were held by CB-IPG. In one of the meetings the progress report and evaluation of the National Rehydration Programme in every Province were presented. After two years of the First Seminar, the case fatality rate due to diarrhoeal disease could be reduced from 20-35 per cent to less than 10 per cent for severe dehydrated gastroenteritis patient and up to 0 per cent for cholera patients (Tumbelaka and Sunoto, 1977).

And since there is a tendency of decrease in giving breast feeding in the urban areas which would extend to the rural areas if serious prevention is not to be taken, during the 4th meeting of CB-IPG in Denpasar, Bali in December 1976, one of the recommendations was the *promotion of breast feeding in the community*.

Several symposia, workshops and meetings concerning promotion breast feeding were convened thereafter. Several studies concerning breast feeding in relation to diarrhoea has been done. Breast feeding campaign was then vigorously launched through several channels (meetings, radiospots, TV spots, movie, etc.). After two years campaign, eventhough it is not satisfactory yet but several results have already been encouraging as can be seen in Table 1 and 2 (Suharyono and Rulina Suradi, 1978).

TABLE 1

PERCENTAGE OF BREAST FEEDING BEFORE AND AFTER CAMPAIGN ON LOW INCOME GROUP IN JAKARTA

Duration of Breast Feeding (months)	Before Campaign (1976)	After Campaign (1978)
0 — 3	66.4%	88.0%
3 — 6	15.7%	72.0%
6 — 9	9.2%	32.1%
9 — 18	7.9%	10.3%
18 — 24	0%	2.1%

TABLE 2

PERCENTAGE OF BREAST FEEDING BEFORE AND AFTER CAMPAIGN IN "MODERATE AND HIGH INCOME GROUP" IN JAKARTA

Duration of Breast Feeding (months)	Before Campaign (1976)	After Campaign (1978)
0 — 3	81.4%	83.1%
3 — 6	44.2%	53.0%
6 — 12	7.8%	13.2%
12 — 18	1.2%	6.2%
18 — 24	0%	0%

Evaluation of The Results of The Rehydration Programme (1974-1978)*

1. *Training*

From 1974-1978 some 421 physicians and 287 paramedical personnel from provincial hospitals, district hospitals and health centres had been trained. When they returned to their working place they had to train other physicians and paramedical personnel, so that their knowledge and skill could be transferred to others. A recent survey of the health centres revealed that 25 per cent of the physicians and 30 per cent of the paramedical personnel of the health centres had been trained.

2. *Research*

Various research concerning diarrhoeal disease and oral rehydration had been done, particularly by the members of the Coordinating Board of the Indonesian Paediatric Gastroenterology and Medical Schools. They deal, among others, with:

- Attitude of the people/mothers in facing diarrhoea.
- Availability, acceptability and effectiveness or oral rehydration in urban and rural communities through the basic health workers and mothers.
- Various modifications (composition of oralyte).
- Effectiveness of sucrose in oral rehydration.
- The use of honey, young ripe coconut water in treating dehydration patients.
- The study of the prevailir ŋ etiological agents (rotavirus microbiological, etc.).

3. *Service*

3.1 *Hospital*

From the hospital's evaluation, almost all of the hospitals in Indonesia have used oralyte in the treatment of diarrhoeal disease. Two-third of them have never found any rejection against oralyte by the communities. Ringer's lactate has been used as a single I.V. solution in general. The average of the rehydration period is 20 hours with the range of 6-36 hours. The average duration of hospitalization is 3 days with the range of 2-5 days. The average of CFR is 3.6 per cent with the range of 1-10 per cent, mainly due to the delayed admittance and accompanying diseases (systemic infection and PEM). Intravenous rehydration was done by physicians (33 per cent) by paramedical personnel (42 per cent) and the rest by both.

3.2 *Health Centres*

The number of the visiting patients due to diarrhoea has increased from 5 per cent in 1974 to 9.5 per cent in 1978. The average of the CFR of the admitted patients due to diarrhoea was 1 per cent with

*Presented by Brotowasisto, *et. al.*, Directorate General of Communicable Disease Control, Ministry of Health at the Second National Seminar on Rehydration, Jakarta, 14-18 November 1978.

more than half of them with the CFR 0 per cent. Oralyte has been used as a routine treatment in 70 per cent of health centres, whereas 26 per cent only sometimes used oralyte due to the lack of logistic. Oralyte has also been used by field health workers as routine (70 per cent) and "sometimes" (22 per cent). It is interesting that 21 per cent of health centres reported the rejection of oralyte by the community, whereas 17 per cent of health centres reported that there was a side effect of the oralyte.

The availability of the oralyte up till now is still more than enough. Based on the study of the health centres at least 5 million litres of oralyte are needed each year, but only one-fifth can be provided by the government. Eighty-three per cent of the health centres tried to provide their needs by themselves, for example, by using local substitute mixture (i.e. sugar and salt, young ripe coconut water, etc.). For I.V. rehydration, 75 per cent of them used R.L. solution, 25 per cent with glucose 5 per cent and NaCl 0.9 per cent. The average of I.V. rehydration was 12.5 hours with a range of 3-36 hours. Almost all of them used ROSE System (Ringer's Lactate — Oralyte — simultaneously and health education).

3.3 *Mothers*

A recent survey of the village mothers in the 26 subdistricts of five provinces revealed that:

- 85 per cent of them never go to school or finish elementary school
- 95 per cent belong to the low or middle socio-economic groups (according to village standards)
- 57 per cent have never heard the term "diarrhoea", whereas the rest know what diarrhoea is
- 85 per cent have heard about the outbreak of "muntaber" (popular term for diarrhoea)
- 65 per cent know well about the hazard and undesirable effect of diarrhoea.

Regarding the type of treatment of diarrhoeal disease, it was revealed that:

- 66.3 per cent go to health centres
- 11.3 per cent drink oralyte directly
- 3.3 per cent drink herbs (traditional drugs)
- 18.3 per cent buy drugs from drugstores, go to traditional practitioners or others.

Concerning the meaning of oralyte, it was revealed that 30 per cent know the use of oralyte, whereas 37 per cent have never heard of it. From the above results we may conclude that Rehydration Training in the provinces and districts has been sufficient, but should be extended to the subdistricts, sub-health centres and finally to the family or mothers.

The rotation of physicians and their staff in the health centres has forced us to train them while they are in the training centres (medical schools or hospitals) so that they know what they must do when they are placed in new health centres or sub-health centres.

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DELIVERY OF PRIMARY HEALTH CARE IN URBAN AREAS – ROLE OF TERTIARY INSTITUTIONS: CASE OF MALAYSIA

Ismail Saad*

Introduction

One of the many aims of a developing country is to provide good health and thus satisfy the most basic human needs of its population. Through careful study and planning and by implementing them diligently and conscientiously, this aim will be achieved in considerable measure.

It is fully realised that developing nations in Asia need to uplift the standard of health care, particularly in the rural areas. The success of this programme will avoid unnecessary loss of life and manpower due to ill health with consequent economic loss to the country as a whole.

By definition primary health care is the essential health care made available to each and everyone in the community and does so through promotive, preventive, curative and rehabilitation action as they are needed. The implementation of the proper delivery of the required services is mainly through the organisation of the Ministry of Health. While these are the direct services and efforts of the health personnel, tertiary institutions also play vital and active role by providing training in medical science courses and participation in service and research, pertaining to the health care. It is pertinent to point out here the WHO report "Medical education must be closely geared to the health problems of the society it seeks to serve". The products of tertiary institutions are those potential workers who form the team in tackling health problems in the health care programmes, such as provision of proper nutrition, adequate water supply and sanitation, immunization against and treatment of endemic and epidemic diseases, and services in maternal and child care.

Some of the control measures to meet minimal health needs undertaken by the Ministry of Health are as follows:-

MINIMUM HEALTH NEEDS AND CONTROL MEASURES

Minimum health service is to provide:

	Category of Service	Government inputs (Mobile team etc)	Community inputs and resources
1.	Medical Care	Treatment of minor Ailments	First aid First aid boxes drug sale Referral of cases

*Associate Professor and Dean, Faculty of Medicine, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia.

2.	Maternal Care	Ante-natal clinic	Maternity care by trained bidans (midwives)
3.	Child Care	Child health clinic immunization school health service	—
4.	Applied Nutrition	Nutrition education by mobile team and adult classes etc.	Buku Hijau Role of WI etc.
5.	Sanitation (a) water supply (b) toilets (c) refuse disposal	Sanitation advice toilet subsidy etc.	Role of youth clubs, mason etc. use of local materials
6.	Disease Outbreak Control	Investigation treatment by special team	Reporting of outbreak
7.	General Health Education	Curative and preventive	—

Functions of the Tertiary Institutions

The Universities have three main functions, that is teaching, service and research. In the context of its role in delivery of health care in the urban as well as rural areas, the tertiary institutions participate directly and indirectly by involving themselves through these basic functions.

Through teaching and training, they provide trained personnel of high calibre including professionals, experts and supporting staff. The tertiary institutions thus cater to the manpower needs for the process of national health development programmes. In relevance to the health care, the medical courses available are in the field of medicine, dentistry, medical technology, nursing, public health, pharmaceutical sciences, and the like.

Participation in research and service by academics in the various projects of the health agencies will greatly contribute to the health care planning and implementation. Thus it may help reveal underlying problems and promote better understanding in tackling and promoting the essential health care. Academic staff and students of certain tertiary institutions have the opportunity to provide direct services to the community. These include the staff of the medical, dental and pharmaceutical institutions who work in hospitals, health centres and clinics. However, as is well known, the main bodies in planning and delivery of health care proper are teams or agencies in the Ministry of Health.

In Malaysia, in fact, the Health Ministry, whose main function is to provide good health services to the community, also caters for training and

research programmes of its own. Consequently there is some overlap of its functions with those of higher educational institutions. However, these agencies are fully committed to the health care delivery proper, whereas the tertiary institutions adopt mainly the supporting role by way of teaching/training and research for the health care and the manpower needs.

There are five institutions of higher learning in Malaysia:

1. Universiti Kebangsaan Malaysia
   (National University of Malaysia)
2. University of Malaya
3. University of Science Malaysia
4. Universiti Pertanian Malaysia
   (University of Agriculture Malaysia)
5. University of Technology Malaysia

The University of Malaya has medical and dental faculties; Universiti Kebangsaan Malaysia has a medical faculty, and there is a school of pharmacy in University of Science Malaysia. The Universiti Pertanian Malaysia is involved mainly in agriculture and animal (veterinary) sciences, and the University of Technology Malaysia is involved with engineering, science and technological sciences.

The training courses available for health personnel in the Ministry of Health organisations and the tertiary institutions in Malaysia are as follows:

1. *Basic Training Programme for Auxiliaries*

   Assistant Nurse
   Junior Hospital Assistant (Psychiatric)
   Junior Laboratory Assistant
   Midwifery Auxiliary (Division Midwife)
   Public Health Overseer
   Rural Nurse

2. *Basic Training Programme for Para-Medical Personnel*

   Dental Technician
   Dispenser
   Hospital Assistant
   Laboratory Assistant (Pharmaceutical)
   Medical Laboratory Technologist
   Physiotherapist
   Public Health Inspector
   Radiographer (Diagnostic/Therapeutic)
   Registered Nurse

3. *Post-Basic Training Programme for Nursing Personnel*

   Intensive Coronary Care Nursing
   Midwifery Tutor
   Nurse Midwife (Division I Midwife)

Nursing Administration
Nursing Tutor
Operation Theatre Technique
Orthopaedic Nursing
Paediatric Nursing
Psychiatric Nursing
Public Health Visitor (Public Health Nurse)
Ward Management

4. *Health Related Courses in the Universities (Undergraduate Courses):*

Medicine
Dentistry
Pharmacy
Medical Technology
Nursing

5. *Postgraduate Courses for Medical Officers*

Master of Public Health
Master of Pathology
Master of Psychological Medicine
Syllabus for the Postgraduate Training in the Orthopaedics Surgery leading to Master's Degree.
To be established soon in Medical Faculty, Universiti Kebangsaan Malaysia.

A New Look at Problems of Urban Health

I try to confine the subject of my talk to the "Delivery of Health Care to Urban Population and the Role of Tertiary Institutions". This programme is an extremely important and purposeful one. Before I proceed further, I feel that it is mandatory on my part to impress upon you the importance of some of my views on urban health with which I am primarily concerned.

I shall rephrase what I have said as "a new look at the problems of urban health" which will include:

1. Health hazards such as diseases following stress.
2. Problems of pollution of not only air but also pollution of water supply and importantly noise pollution.
3. Diseases such as the sexually transmitted ones; in a big city where we have international airports and sea ports, several diseases are imported from abroad, and this merits special consideration.
4. Immigrant population from the rural areas, importing diseases, as it were, from rural to the urban population.
5. Over-crowding the ever perplexing and disturbing problem. In its wake, the production of certain diseases which were hitherto undetected or unknown.

6. Drug addiction — a social menace that is now becoming a world wide problem.

With this broad background of a wide spectrum of diseases in the urban population, it is but natural that we direct our attention to resolving these problems by a multi-pronged approach. Hence it becomes essential to call for the continued co-operation of:

1. Community Health Specialists;
2. Venereologists;
3. Industrial Health Specialists;
4. Psychiatrists particularly specialising in problems of drug addiction; and
5. Other Health Related Specialists.

It is needless to stress that persons qualified in anti-pollution will also have their vital role to play in this all-embracing approach.

In this context, as a Dean of the Faculty of Medicine, I am committed to initiate meaningful and dynamic dialogue with not only health educationists but also people who belong to the categories which I have referred to earlier.

Before I draw up a "blue print" of the objectives and suggest proper perspectives of approach, the role of our institution (Tertiary Education Institution) in this multi-disciplinary approach has to be emphasized:

1. We must stabilize the existing modes of disease control and cure as practised by many general government medical and private practitioners in the urban areas. However, the methods adopted by them, as of now, require not only up-dating but also given a sophisticated outlook lest we should lag behind in the overall progress of the nation.

2. Regular refresher courses in collaboration with various associations such as Malaysian Medical Association and other academic bodies, Academy of Medicine, Institute for Medical Research, Public Health Institute, University of Malaya, National University of Malaysia, University of Science Malaysia and other higher institutions. These courses must be conducted religiously and regularly for the benefit of all those who are charged with the responsibility of urban population health care.

3. Anti-pollution drive must be given the proper boost it deserves, by the concerned authorities. These authorities may be contacted as and when required by our Community Health people who in my opinion are the right persons for the right job.

The singularly interesting and ever increasing problem of sexually transmitted diseases which, with the emergence of penicillin resistant gonococci and the like, is of special consideration. It is decisively imperative that the Universiti Kebangsaan Malaysia and University of Malaya help concretely by procuring men especially trained in the field of Venereology. Extra efforts are to be made to obtain services of such person. At present we have an alarming shortage of such qualified specialists. These diseases are at present

mostly missed and consequently inadequately treated or improperly treated. The role of the institutions of tertiary education is in providing the proper stimulus to impart the required training to interested people. Specialists in social medicine whose main task will be to detect the carrier of diseases and trace the source of infection, will help in the control and prevention of the diseases. Herein, also looms large the role of Psychiatrists who in collaboration with Immunologists, Social Medicine experts, Community Health experts can play a significant role in the control of these diseases which are now becoming rampant.

There are several rubber and oil palm plantations in this country, who use large amounts of fungicides and insecticides which possibly contaminate the water supply in some way or other. The most essential role of purifying water in areas which are flooded by such contaminants, is within the jurisdiction and responsibility of Community Health men who can only be contributed by institutions of higher learning in addition to the Ministry of Health. In the foreseeable future, we hopefully believe to produce adequate number of interested people in this discipline of medicine, and this provision will go a long way to reduce the risk of the population to this danger.

Drug addiction is of such mountainous importance that within this short time it will be well-nigh impossible for me, nor do I consider myself competent to discuss this in detail. However, suffice it to say that Psychiatrists under the guidance of the institution of tertiary education, which is also committed to produce more qualified men in this field, will contribute considerably to the progress of tackling this ever disturbing problem of drug addiction.

Overcrowding — While it is admittedly the problem of the Ministry of Housing and Development, we believe that we have a definite role which has to be specified. This specification has to be adhered to by the concerned authorities in the planning of housing estates. This then will, to a great extent, help reduce overcrowding and exposure to the risk of such overcrowding which in its wake will produce diseases that never existed so far. Here again, it is too well-known to reiterate the role of the Community Health men who are trained by the concerned departments in the tertiary institutions.

Besides the problems which have been highlighted we have some other problems such as industrial accidents, unrestricted use of dangerous drugs, early detection of cancer, and possibly quackery which is being practised within urban areas as well. At a recent meeting of the Malaysian Medical Association and the Ministry of Health, some of these points were discussed.

There has been very little dialogue between the doctors practising in the rural setting and those in the urban areas. It is one of the important objectives of our training that the future doctors will succeed in creating a liaison between these two. Such an interaction will be stimulated by institutions of tertiary learning and this in itself will form the nucleus of proper delivery system of the expertise to the two sectors. We will have achieved a lot, if we succeed in this.

The institutions of tertiary education must also take up the responsibility of surveying the present structure and the future needs of the country with

particular reference to health system. The people dealing with science, technology and environmental health should be approached to initiate dialogue between Ministry of Health, Ministry of Education and other academic bodies so that in the final analysis there will be a successful control of environmental pollution which has already been referred to earlier. The Road Safety Council and the Ministry of Health can together marshall all the forces which will help reduce the incidence of road trauma and industrial accidents.

Abuse of drugs should not be misconstrued as drug addiction which I have already discussed. It will be relevant to point out that the best way to control abuse is by tackling the problem of unrestricted sale of drugs. The Ministry of Health with the collaboration with Ministry of Education can also investigate into the possibility of improving the existing situation. Pharmacologists and pharmaceutical personnel who are being trained in the institutions can increasingly be employed so that medical profession at large is able to take advantage of their expertise and help the population from the people who resort to unrestricted sale of dangerous drugs.

Health Administration

Since Independence, with the advent of Ministerial system of Government, the responsibility for health in the country was vested with the Minister of Health. Although the Minister of Health has blanket authority for health throughout the country, the State Governments have legislative authority in Local Authority areas under them for the implementation of preventive health measures in such areas. However, should local laws conflict with federal laws, as per provision in the Constitution, the federal laws will prevail.

The health preventive measures in Local Authority areas are confined mainly to sanitation activities, the licensing and control of food premises, nuisance trades, water supply and in municipalities, maternal and child health services form part of their activities. Curative services such as in hospitals and dispensaries are provided by the Federal Government for such areas.

The State Governments create Local Authorities in almost all urban areas. However, they are of various grades beginning with Local Councils at one end and Municipalities at the other, with the Town Boards and Town Councils in between. The Local Councils and Town Boards are fully subsidized and they graduate to Town Councils which are autonomous, and these later mature to Municipalities with full autonomy.

Urban Areas

Using the 1970 Population Census the definition of urban areas are gazetted as towns which have a population of 10,000 or more persons. The number of urban areas in the different states in Malaysia are as follows :-

States	No.	% of Pop. to Total
Johore	7	26.2
Kedah	3	12.2
Kelantan	5	15.1
Melaka	2	25.0
Negeri Sembilan	3	21.5
Pahang	4	18.9
Pulau Pinang	5	50.9
Perak	8	27.6
Perlis	—	—
Selangor	7	45.4
Trengganu	5	26.9
Sabah	3	16.4
Sarawak	3	16.7
Malaysia	55	26.9

The population resident in gazetted places with a population exceeding 10,000 is 2,780,000 or 26.9 per cent of the country's population of 10,439,430. However, the degree of urbanization in Peninsular Malaysia is 28.8 per cent, in Sabah 16.4 per cent and Sarawak 16.7 per cent. Urbanization in states of Malaysia has taken place steadily. While certain states have shown rapid rates of urbanization, others have also been feeling the impact of urbanization though at slower rates.

Urban-Rural Migration

In the 1970 Population Census a total of 1,968,353 intra-state migrants were recorded. Of this 417,561 or 21.2 per cent moved to urban areas while 78.8 per cent had moved from one rural to another rural location. In Peninsular Malaysia of the 1,666,706 intra-state migrants, 21.6 per cent had moved to urban areas and in the case of 78.4 per cent, the migration had been from one rural location to another. Statewise, the number of intra-state migrants to urban areas as a percentage of the total number of intra-state migrants in that state, was highest in Selangor where 123,481 or 36.8 per cent of the total number of intra-state migrants had urban destinations. About 32.0 per cent of the intra-state migrants in Penang had urban destinations while the percentage for the State of Perak was 22.5 per cent.

In general, the number of intra-state migrants having urban destinations could well be understated because of the operational definition of "urban" or "rural" areas as used here. Since urban areas were defined as all gazetted areas with a population of 10,000 or more, then the number of migrants to urban areas may be understated to the extent that migrants settle in urban conurbations or built-up areas on the periphery of towns, areas which are non-gazetted and therefore classified as rural.

The Table below shows the Urban-Rural Destination of Intra-State Migrants by States.

TABLE 1

URBAN-RURAL DESTINATION OF INTRA-STATE MIGRANTS BY STATE: MALAYSIA, 1970

Migration-defining States	Urban		Rural		Total	
	Number	%	Number	%	Number	%
Johore	49,104	18.7	213,579	81.3	262,683	100.0
Kedah	22,011	10.4	190,285	89.6	212,296	100.0
Kelantan	14,326	11.6	109,615	88.4	123,941	100.0
Malacca	3,490	8.8	36,372	91.2	39,862	100.0
N. Sembilan	13,397	16.4	68,249	83.6	81,646	100.0
Pahang	13,316	14.9	76,158	85.1	89,474	100.0
Penang	31,853	32.0	67,631	68.0	99,484	100.0
Perak	73,113	22.5	252,229	77.5	325,342	100.0
Perlis	—	—	23,520	100.0	23,520	100.0
Selangor	123,481	36.8	212,432	63.2	335,913	100.0
Trengganu	15,761	21.7	56,784	78.3	72,545	100.0
Peninsular Malaysia	359,852	21.6	1,306,854	78.4	1,666,706	100.0
Sabah	30,881	23.1	102,717	76.9	133,598	100.0
Sarawak	26,838	16.0	141,221	84.0	168,049	100.0
Total Sabah and Sarawak	57,719	19.1	243,938	80.9	301,647	100.0
Malaysia	417,571	21.1	1,550,792	78.8	1,968,353	100.0

*conurbation = a group of towns, forming to single built-up area.

The rate of Urban-Rural migration is expected to increase in view of the Government's policy to diversify the economy and create employment opportunities through rapid industrialization. Hence, it can be expected that the number of urban areas will be on the increase in the years to come.

Primary Health Care in Urban Areas

As stated earlier, the provision of health services in the URBAN areas of Malaysia is the decided responsibility to be shared between the State and Federal Governments. The State Governments, through the local authorities are responsible mainly for the preventive aspects of health and the Federal Government for the curative aspect. However, as the local authorities are of different levels, the quality and quantity of preventive services differ from one local authority area to another. For example, in the Local Council areas, the lowest grade of Local Authority, the sanitary services are rudimentory in nature, whereas the services in the Municipal areas may be highly sophisticated with modern sewerage works and incineration facilities. Then in between Town Boards and Town Councils one may see the depreciating vestiges of primitive measures and the beginnings of modernization.

With industrial and manufacturing trades being rapidly established in and around urban conurbations, slums and squatter problems are on the increase in especially the larger Local Authority areas. In the wake of this 'urban drift', existing health services and facilities are rapidly experiencing difficulties to cope-up with the increasing demands. Legislative constraints worsen the efforts to provide adequate preventive health services to the so-called illegal settlers. Therefore, innovative measures must be taken to provide essential health services to such slum areas. Other roles of the tertiary institutions as supportive bodies in providing the primary health care to urban areas have already been discussed.

As of now the health personnel in Malaysia are actively pursuing urban and health care programmes in the form of Community Health Movement which is based on the Primary Health Care principles. An intersectorial approach is being adopted in the planning and subsequent implementation of the Community Health Movement Programme. Special emphasis is laid on direct community involvement and participation both in planning and implementation of the programme. With active participation of the community assisting the health personnel and academics of tertiary institutions, we hope that this will bear fruits in the near future.

SUMMARY

Tertiary institutions in the developing countries play an important role in providing manpower, expertise and incentive for improved health delivery care. As urbanization advances, the role of the institutions will increase in magnitude and quality of its supporting services. They will forge ahead with dynamic programmes which will contribute directly and indirectly to the progress of the nations which largely depend upon the health of their population.

The problems that have emerged in urban areas and in urbanized rural areas comprise health hazards, pollution, sexually transmitted diseases, importing of new diseases hitherto unknown, drug addiction, drug abuse, overcrowding and quackery and early diagnosis of cancer. The essential role in this multi-pronged approach towards delivery of health care by institutions of tertiary training have been discussed with relevance to the existing facilities. Suggestions for continued collaboration among various institutions to tackle various problems have been made with proper emphasis on prospective studies for the future.

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DELIVERY OF PRIMARY CARE IN URBAN AREAS: ROLE OF TERTIARY INSTITUTIONS IN SINGAPORE

W.O. Phoon*

Primary Health Care has been defined "as essential health care made universally accessible to individuals and families in the community by means acceptable to them, through their full participation, and at a cost that the community and the country can afford."[1] The facets of Primary Health Care are commonly regarded as including promotional, preventive, curative and rehabilitation services. The focus of Primary Health Care is on the community, local health needs and the involvement of the community in health programmes. The emphasis of Primary Health Care is on prevention, which is the first line of defence against disease and ill-health.[2]

The specific components of the Primary Health Care approach have been listed as follows:

(a) Primary Health Care consists of simple, efficacious and effective measures which include preventive, promotive, curative and rehabilitative activities.

(b) Primary Health Care is carried out at the peripheral level of the health services.

(c) It implies an intersectorial approach.

(d) Community involvement is necessary for its effective functioning.

(e) It is mutually supportive of community development.[3]

The delivery of Primary Health Care programmes obviously require the diagnosis and measurement of community health problems. An epidemiological approach is therefore necessary. A continuous input is required of epidemiological data, such as those concerning demographic data, mortality, environmental and health services. The usefulness of Primary Health Care programmes also needs continuous monitoring, particularly to evaluate their impact on the Five "Ds" of Disease — Dissatisfaction, Discomfort, Disability, Distress and Death. Other essential tools of Primary Health Care include a Systems Approach and Operations Research.

In the light of the above, I shall now describe the role of tertiary institutions of learning in the delivery of Primary Health Care in Singapore.

In the very general sense, all such tertiary institutions contribute to the promotion of Primary Health Care insofar as they increase the awareness about community needs and dynamics. In a more specific sense, specific institutions or departments concerned with systems analysis, environmental engineering, sociology, social work and administration, health economics, demography, operations research, educational science, community deve-

*Professor and Head, Department of Social Medicine and Public Health, University of Singapore, Singapore.

lopment and kindred subjects are all contributing in teaching and research towards facets of Primary Health Care.

In this paper, however, I shall deal more particularly with the tertiary institutions concerned specifically with Health. I refer to the Faculties of Medicine and Dentistry and the Pharmacy Department of the Faculty of Science. I will also refer to the institutions involved in the training of nurses and allied personnel, although they may not come strictly under the category of tertiary institutions of learning. I must emphasize that all the views I express in this paper are my personal views and may not necessarily be those of any of the institutions described.

The Faculty of Medicine

Medical education in Singapore was started in 1905. Until less than a generation ago, training for medical students was only available in Singapore. Even as recently as the mid-seventies, Malaysian medical students constituted one third or more of each medical class.

With regard to Primary Health Care, the Faculty of Medicine has been like the Englishman who spoke English prose all his life without realizing it. For a long time the students have been taught the concepts and fundamentals of Primary Health Care, although not under that name.

(a) *Courses in Human Ecology and Behaviour in Health and Disease, Applied Nutrition and Elementary Biostatistics*

The medical students first come into contact with the teaching programmes of the Department of Social Medicine and Public Health in their second year of studies. A course in Human Ecology and Behaviour in Health and Disease is conducted. Students are brought out into the "grass-root levels" of the community to study and observe at first hand group behaviour in community situations such as our ubiquitous coffee shops and public housing estates. They are then made to study behaviour in disease at the Primary Health Care level.

In the Applied Nutrition course also held in the second year, we try to inculcate an understanding of the practical aspects of Nutrition, particularly with regard to the role of proper nutrition in the prevention, cure and rehabilitation of disease and the promotion of health. In the course of Elementary Biostatistics, we try to provide the students with the tools which, among other purposes, should enable them to diagnose, evaluate Primary Health Care problems and plan their solutions on a more objective basis.

As our students have very little clinical knowledge at this relatively early stage of their career, there is no delivery of Health Care in the strict sense in any of these three teaching programmes.

(b) *Socio-Medical Cases*

Cases of patients in the clinical units of the hospital are selected for their social and medical implications. Groups of 2-4 students are allotted one such case to study from the aspects of clinical science and commu-

nity medicine. They are then brought to the patient's home (and sometimes the place of work as well) by a lecturer and a field investigator. The family is interviewed. A nutritional study of the family and an environmental assessment of the home are made. Subsequently, there is a discussion at which the findings are presented to other students and teachers in both Social Medicine and Clinical Sciences. For one year after discharge from hospital, the patient is followed up by the students, particularly with respect to rehabilitation and follow-up treatment. Although the student is not allowed to take the place of the physician, he is expected to advise the patient and his family concerning simple procedures (such as the administration of insulin), medical care (such as the treatment of bedsores or incontinence) nutrition and the elements of health education, especially those relating to the specific case. Two such socio-medical cases are undertaken by every medical student throughout his undergraduate training. In addition, each student participates in the discussion of another dozen or so similar cases presented by his colleagues.[4]

We are convinced that these socio-medical cases are very important in inculcating a concept of Primary Health Care in the minds of medical students. They help to reduce the hospital-centred mentality of many medical students. Although the starting point is a patient already admitted into hospital, the students are taught to appreciate that the profile of disease in hospital is very different from that at the Primary Health Care level and that the incidence and prevalence rates of mortality and morbidity in a given population cannot be calculated from hospital statistics alone.[5]

(c) *Community Health Surveys*

All medical students at the end of their third year of training undertake a Community Health Survey. The planning and conduct of this survey last for four weeks. The health parameters of a chosen community of approximately 500-1,000 people are studied. The students go out in groups of 15-20, supervised by one or more teacher. They stay in the community under study, if it is located in a remote area. A range of different kinds of communities is usually chosen, so that each student can learn about the different health problems of at least five or six different communities.[6]

We believe that the Community Health Survey is a contribution to Primary Health Care in at least three respects. Firstly it helps to train the future doctor in various aspects of Primary Health Care. Secondly, it helps to define the community health needs and to stimulate community involvement. Thirdly, it helps to devise and implement simple measures to improve the health of the community. For example, in 1977 two groups of our students undertook as a special project during their Community Health Survey a study of the problem of skin diseases in their communities. The diagnoses were subject to confirmation by skin specialists, who participated in that Project. All detected cases were then treated by the same specialists, assisted by the students. Another example is the study

of worm infestation in a rural, island community. All detected cases were de-wormed and a follow-up survey was conducted to ensure that re-infestation was kept to a minimum. In both these examples the leaders of the communities were first contacted. All the members of the communities were informed and educated concerning the specific health programme. As far as possible, local resources were mobilized to cope with the problem. It must be pointed out, however, that the contributions to the delivery of Primary Health Care by these Community Health Surveys themselves are very small compared with their potential contributions through the physicians so trained.

(d) *Three-week Block Posting in Social Medicine and Public Health*

All medical students are given a block posting in Social Medicine and Public Health in their penultimate year of studies. They are divided into batches of approximately 45. Each batch of students would then undergo a posting of three weeks, during which they would study Primary Health Care and Community Health facilities. Visits or short postings are devoted to the study of such components of Primary Health Care as maternal and child health, school health, the provision of clean water and the disposal of solid or liquid waste. Each part of the programme includes a discussion. As for the Community Health Survey, the main emphasis is admittedly on teaching rather than the delivery of health care.

(e) *Other Components in the Social Medicine and Public Health Course for Medical Students*

I shall not describe in detail the other components of the Course, which include lectures on Epidemiology, Public Health Administration, Environmental Health, Personal Health Services, Occupational Health, Medical Sociology, Psychology and Mental Health, Demography and allied subjects. I would only stress that we have been laying increasing emphasis on small-group teaching in the form of seminars and forums. We have also been drawing upon sociologists, ministers of religion, community leaders, social workers, practitioners of Primary Health Care and other health professionals to assist us in our teaching programmes to an ever-increasing extent. In this way we hope to promote a dialogue between the medical profession and the community, particularly with regard to Primary Health Care and also to engender a better spirit of team-work among all members of the Health Team. For far too long, physicians have tended to consider themselves the sole deliverers of Health Care at whatever level. Again, for far too long, the medical profession has considered itself the sole arbiters of what health measures should be carried out. In reality, the community itself should help to decide on the measures and help to carry out and evaluate them. In addition, the authorities and the people in a particular community must act together as partners in promoting health.[7]

(f) *Posting in General Practice*

Final year medical students are posted for one week to different general practitioners in small groups. As general practitioners deliver Primary Health Care to a large section of the community, this posting helps students to increase their appreciation of the subject.

The Faculty of Dentistry and the Pharmacy Department of the Faculty of Science

The Public Health Dentistry course of the Faculty of Dentistry, although very brief, is designed to draw attention to the dental aspects of Community and Primary Health. The intensive training undergone by dental students in their clinical years include daily delivery of dental care at the primary level to schoolchildren and members of the public.

The Pharmacy Department of the Faculty of Science trains pharmacists primarily. In recent years, there have been vigorous attempts to wean the pharmacy students from over-concentration on the hospital situation and to lay more emphasis on broader aspects of Pharmacy, including those at the Primary Health Care Level.

Schools of Training for Nurses and Allied Health Personnel

In the last few years, there have been far-reaching changes in the training of nurses and allied personnel:-

(a) The postbasic Health Visitors' Course has been radically changed to encompass paediatric and obstetric nursing as well. This change will probably enable nurses to fit in more closely with the Primary Health Care set-up in the Government Health Service. However, it is still too early to conclude whether the change is successful or not.

(b) Very recently, Nurse-Therapists have been trained (who are trained nurses) and employed to deliver Primary Health Care at Outpatients Clinics. Previously, all treatment was initiated or prescribed by physicians as a rule.

(c) The Institute of Dental Health has for the past few years been training Dental-Therapists. These personnel are not dental surgeons but are given shorter courses of training to enable them to deliver Primary Dental Care.

The Future

Although great strides have been made by tertiary institutions in Singapore concerning the teaching of Primary Health Care, there is still much scope for improvement. In the medical course, there remains an overemphasis on the secondary and tertiary levels of Health Care. This is partly due to the imbalance of teaching hours in the curriculum. It is also partly due to the fact that, generally speaking, there are greater financial rewards in delivering secondary and tertiary levels of Health Care than at the primary level. There is, moreover, greater prestige and glamour at the same time. Therefore a lot of hard work requires to be done, not only in overhauling the

medical curriculum but also in reorienting the thinking and priorities of the medical teachers, students and the entire community.

With regard to a change in curriculum, our Faculty of Medicine has appointed a committee for this purpose. Those of us on this committee are now tending towards giving far more emphasis on Primary Health Care than hitherto. In the Department of Social Medicine and Public Health, attempts are being made to involve the Primary Care Division of the Ministry of Health more closely in teaching at both the undergraduate and postgraduate levels. With the impending removal of all Departments of the Faculty of Medicine to a new campus, all the teachers and students of the Faculty will be together, unlike now when we are scattered in several campuses. It is hoped that all departments will join forces to deliver an integrated and comprehensive system of Primary Health Care to the community around the new campus.

Hopefully, we shall develop a closer collaboration also with the other tertiary institutions concerned with the teaching of other health personnel as well as with the Government Primary Care Services. This again should improve the quality of the delivery of Primary Health Care and also enhance the standard of research in Primary Health Care.

There is still almost no dialogue between practitioners of Classical Medicine and those of other systems of Health Care. Some members of our Department are making a study of the contribution of "Chinese" traditional Medicine to Primary Health Care in Singapore. Although difficult to achieve, it would be good if there could be a cross-fertilisation of ideas between practitioners of the several systems of Medicine, particularly at the level of Primary Health Care.

Medical students still tend to be observers rather than actual deliverers of Primary Health Care. There should be attempts to change this, either by introducing a system of "internship" for final year students in Primary Health Care or by extending the present one-year system of housemanship to two years to include a posting in Primary Health Care.

It would be highly desirable if all young medical graduates could undergo a period of training in Primary Health Care, regardless, of their eventual speciality. As now all medical graduates are required to serve the Government health services for a number of years, there should be no difficulty in enforcing this period of training. However, steps need to be taken to ensure the availability of competent and properly motivated teachers of Primary Health Care. Such teachers should not only be technically competent but also have the capability of involving the general community in the planning, implementation and evaluation of Primary Health Care.

We could do worse than ponder on these words, "Change in a pattern of practice or action ... will occur only as the persons involved are brought to change their orientations to old patterns and develop commitments to new ones ... (These) involve changes in attitudes, values, skills, and significant relationships, not just changes in knowledge, information or intellectual rationales for action and practice."[8]

SUMMARY

The role of the tertiary institutions in the delivery of Primary Health Care in Singapore is described. To date the emphasis of these institutions has been on the teaching rather than on the actual delivery of Primary Health Care. However, considerable progress has been made in recent years. It is envisaged that this progress would gather momentum as time passes, despite problems in attitudes and manpower.

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DELIVERY OF PRIMARY HEALTH CARE IN URBAN AREAS – ROLE OF TERTIARY INSTITUTIONS: CASE OF THAILAND

Rachit Buri*

Members of health profession concerned with today's health care delivery are seeking improved methods of providing health care to the masses, and at the same time trying to keep this care personnel and individualized.

It is generally recognized that a state of crisis exists in health care and health care system in this country. By definition, as used here, a crisis is produced when a person (or organization) finds his usual methods of problem solving ineffective when coping with an obstacle to important health goal (Caplan).[1] The dilemma is commonly attributed to the manpower shortage among the health professions and to lack of an adequate system for delivery of health services. These two factors are so interrelated that any action to correct the malfunctioning of one may be expected to bring about changes in the other.

Evidence from the Western World has indicated that physicians and nurses cluster in large centralized medical centres. Inappropriate use, as well as inappropriate distribution of personnel confounds the manpower shortage. Our figures show similar trends as illustrated in Table 1.

Bergman *et al*[2] stated that "Paediatricians spend over 60 per cent of their time attending minor illnesses and examining well children. Baundry[3] commented upon physicians practising internal medicine thus "90%-95% disease entities they encounter are easy to diagnose and treat and only 5%-10% of diseases will be difficult to diagnose."

Efforts to make health care accessible, adequate, available and acceptable to deprived population require ecological and creative approach. It means serving families in their neighbourhood, using patterns of health care delivery which were not conducive to the highly specialized, infinitely technical, and controlled professional practice arenas. Health care in these circumstances tends to be holistic, humanized and informal. Consumers of health services assume major responsibility in planning, developing, and managing their own health centres. Health professionals become learners and followers in certain aspects of the neighbourhood health programmes. From the consumer groups, the local health workers came into existence, functioning as case finders, interpreters, basic care providers and liaison personnel between the people and providers of care.

Since the main theme of this seminar is on "Higher Education" and "Basic Health Needs", the author would like to make clear at this point what is generally understood as "needs" and "demand".

Boulding[4] introduced the idea that demand is a collection of "wants" and "needs". He stated that the behaviour of individuals toward their wants could

*Professor and Dean, Faculty of Medicine, Ramathibodi Hospital, Mahidol University, Bangkok, Thailand.

TABLE 1
DISTRIBUTION OF MDs AND BEDS IN BANGKOK AND THROUGHOUT THE COUNTRY FOR THE YEAR 1977

	Bangkok	Whole Country
Government and semigovernment hospital and clinics with beds		
General	32	281
Special	6	86
	38	367
Private hospitals and clinics		
General	53	139
Special	37	98
	90	237
Number of beds Government		
General	10,599	43,837
Special	2,210	8,056
	12,809	51,893
Number of beds Private hospitals		
General	2,424	4,615
Special	343	716
	2,767	5,331
MDs Government		
General	2,088	3,031
Specialists	140	204
	2,228	3,235
MDs in private practice		
General	190	361
Specialists	18	26
	208	387

(Source: *Bangkok Municipality Report)*

be explained by economic reasoning but their needs are more basic and beyond economic reasoning. Jeffers *et al*[5] pointed out that need is a technically defined concept which implies the amount of goods and services that are needed for the maintenance of health. This need is defined by the health personnel. What health goods and services that the individual will consume depends on his resources, income, time and energy and the price for health goods and services in terms of money, time and energy. The supply of health goods and services is dependent on the money derived from selling the goods and services.

The fact is, consumers do not consume what they need but spend their money on what they want, because what is needed competes with what is wanted. By consuming less health goods and services needed, the individual's resources become sufficient to purchase the goods and services he wants. He will do so if such were of high enough value to him, trading off the needed health goods and services for the latter. This state of affair exists at all levels of income but the adverse effect is felt mainly among the lower income groups, even if health care facilities are accessible.

The concept of primary health care is understood differently in different countries. In Thailand, the concept includes "promotion of proper nutrition, an adequate supply of safe water, basic sanitation, maternal and child care including family planning, immunization against the major infectious diseases, prevention and control of locally endemic diseases, education concerning prevailing health problems and the methods of preventing and controlling them and appropriate treatment of common diseases and injuries."[6] The following recommendation is adopted to guide and assist in the implemention phase "Primary health care is a public health approach to the integration of health promotion, disease prevention, medical care and rehabilitation through community involvement and cooperation of the government sector for the achievement of local health objectives, using basic resources mostly from the local area; and applying an appropriate technology which easily integrates into daily life, culture, tradition and society of the local population, and results in resolving health problems of acute perceived need. Its implementation is connected to the overall local development activities and to the public health service system's support of those activities: acceptance of referrals from the local area, and strengthened communication with the local population".

The health problems facing Metropolitan Bangkok (the largest urban area of the country with an estimated population of 4.3 million in 1977, reaching 5.5 million by 1980) are complicated by numerous factors, some of the most important are:

1. Arbitrarily, the population of Bangkok is categorized according to their regular income as:

   a. high income group (more than Baht 15,000 per year)
   b. government — employed (Baht 10,800-150,000 per year)
   c. small shop-keepers (difficult to estimate but probably Baht 50,000-100,000 per year)

d. labourers (Baht 30-35 per day)
e. people living in slum areas.

The socio-economic and health problems are most prevalent among the last group.

2. Urbanization. The rapid population growth rate of 7 per cent per year, largely due to migration from the north, north-east and central regions leads to a population density of approximately 3,000 people per sq. km. (area of Bangkok Metropolis being 1,548 sq. km.). The socio-economic and health problems are the increasing rates of juvenile delinquency, crime, drug addiction, venereal diseases, malnutrition and its complications especially among preschool children, accidents and violence. It is often said "to be poor in Bangkok is worse than to be poor in rural areas".

3. Slum areas. The Municipality of Bangkok has listed more than 300 slum areas. The thirteen major areas are shown in the Table on p. 106.

4. Pollution. The absence of any form of industrial zoning, Bangkok has at least 10,000 mini, small and intermediate sized factories scattered throughout. Industrial waste poses problems of great magnitude.

Air pollution. An estimated fall of four tons of dust per sq. km. on the city per month, which does not include the noxious fumes such as carbon monoxide, emitted from the city's 400,000 motorcars.

Water pollution. Industrial chemicals disposed into frequently ineffective sewage systems clogged with plastic bags and/or other insoluble material is a common sight in the city.

5. Industrial health. In 1975, the National Statistics Office published the total number of factory workers whose health were at risk. These can be summarized in the Table on p. 106.

Since the responsibility for providing the primary health care services falls mainly upon the Department of Health of the Bangkok Municipality, it is worth mentioning that with a total health manpower of 2,044 members*, the service provided can be considered comprehensive.

Administratively, the department is divided into eight divisions, each having 3-9 sections, covering such fields as environmental health, public health nursing, health promotion, health support, dental care, communicable disease control, veterinary disease control and health education.

Functionally, all divisions contribute personnel to serve in the seven health zones comprising 45 health centres, 60 secondary health posts and 8 midwifery stations. In order to support the peripheral system, four general municipality hospitals, with a total bed capacity of 1,500, provide facilities for referral.

The various levels of health care provide by type of institutions in Bangkok is illustrated in Diagram 1.

*including 122 physicians, 31 dentists, 22 veterinarians, 24 pharmacists, 7 health educators, 59 social workers, 508 public health nurses, and 61 sanitary-inspectors.

Slum Areas	Area (rai)	No. of families
1. Klong Tuey	800	9,000 (representing approximately 70,000 people)
2. Din Daeng	n.a.	1,250
3. Bon Kai	n.a.	400
4. Khing Bhej	n.a.	2,500
5. Behind Manungkasila mansion	11.8	224
6. Wat Don	95	1,174
7. Soi Intamara	38.5	660
8. Wat Bai Ngurn	20.3	313
9. Near Pramae Mary Arnukroh School	81.2	465
10. Near Tamruaj Mah 23	n.a.	250
11. Behind Talard Mai Prayakrai 27	n.a.	473
12. Sukuntaram Road	60.9	2,008
13. Soi Ruam Rudee	29	116

n.a. = unavailable
1 Acre = 2.2 Rai
(Source: National Housing Project, B.E. 2520, A.D. 1978)

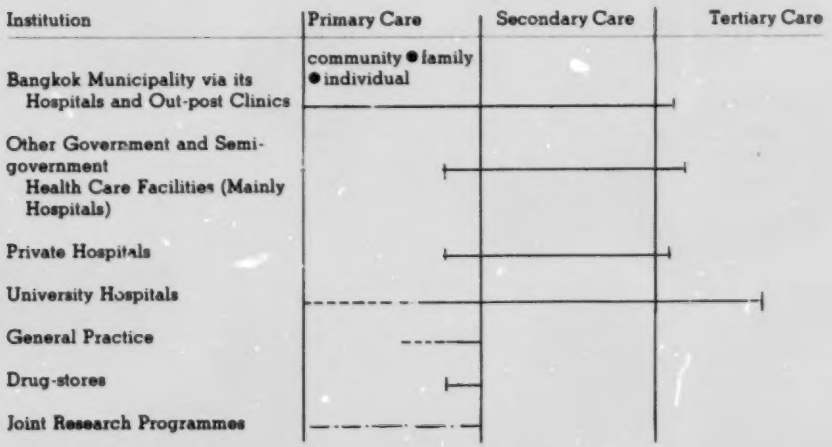
Type of Industry	Total Number of Factory Workers with Health Risk
Chemicals and Insecticides	619,397
Mineral dusts	454,100
From environmental condition e.g. noise	453,374*
Dust from vegetable and animal products	333,967
Poor economic condition	252,114
Lead factories	107,767
Chromium factories	166,852
Manganese factories	115,839*
Arsenic factories	52,154
Mercury factories	32,556*
Accident prone factories	16,476*

* Many factory workers have already got sick from excessive exposure or accidents
(Source: D. Muangman in country report, *Health Aspects of Community Development in S.E. Asia*, edited by H. Katsunuma, N. Maruchi and M. Togo published by SEAMIC/IMFJ 1977 pp. 207-208).

It is apparent that primary health care, as defined by WHO, is attempted by the municipality health centres, while other organizations or institutions concentrate their efforts on secondary and tertiary cares. Even then, the type of care provided is individualized in out-patient departments and very rarely extended to induce all members of the family or those at risk. The situation is worse still on considering outreach of the services to the urban community as a whole. Therefore, generally, the health care coverage is inadequate and service delivery fragmented.

DIAGRAM 1

LEVEL OF HEALTH CARE IN URBAN BANGKOK
FUNCTIONAL RESPONSIBILITY



However, the medical faculty with its available resources can strengthen the existing primary health care service by providing:

1. Support at the general out-patient sessions and aid in the feed-back of relevant information concerning the patients to the nearest health post for follow-up care.
2. Post-natal services especially new-born immunizations and health education programmes for mothers on various aspects of nutrition, family planning, communicable disease prevention and health promotion, etc.
3. Support at the maternal and child health and family planning clinics.
4. The necessary resources for the follow-up at the family level, if necessary.

In all these activities, the health science students participate in real life situations, thus rendering their learning experiences more meaningful.

5. Training programmes for the potential trainers.
6. Re-examine the present curriculum to fit the changing needs and roles of

doctors, nurses, and other health personnel, emphasis to be placed on problem-solving ability, team approach, and communication skills.

7. Research on the use of appropriate technology.

8. Formation of a joint intervention programme to solve the problems. These are already carried out in several slum areas by various institutions and organizations.

SUMMARY

Primary health care, as defined by WHO, is adopted by the health personnel in this country and is carried out in the urban areas of the Bangkok Metropolis. Although the network of the various centres covers the whole area of the metropolis, their utilization is still inadequate because of the fragmented nature of the services rendered and the discrepency between the health "needs" and health "demands" felt by different people among many other influencing factors. The Medical Faculty as an institution of higher learning can no longer afford to confine its responsibility to the achievement of academic excellence. It has to seek ways and means to achieve academic relevance. It can do so by educating and training health personnel to suit the roles they have to play in real life situation. Certain skills such as administration and human relationship are equally as important as scientific knowledge and professional skills. The faculty has to continue providing services which incorporate health education, prevention, promotion and control of spread of infectious diseases whether the services are carried out at the out-patients, M.C.H. and nutrition clinics.

Under special circumstances, an intervention programme as a joint venture with the urban health centres, may be one way towards solving the community's health problems.

The faculty should cooperate with the Health Department in determining the major health problems and help to formulate health policies, including plans for implementation. The faculty is in a unique position to provide the required personnel and technical knowledge.

The use of appropriate technology should be carried out after reviewing and analysing information on the community's health problems.

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DISCUSSION

The discussants for this session were: Dr. Alex Papilaya, Prof. Tongchan Hongladarom, Dr. Widodo Talogo and Prof. Charn Sathapanakul.

The essence of the discussion is summarized below:

Dr. Alex Papilaya began by saying that the term urban is not conceptually uniform in all countries. In Malaysia a population of 10,000 is regarded as urban whereas in Indonesia it is 50,000. Continuing his comments, he suggests that because a university has limited resources, it should concentrate its attention on providing basic health care to those living in its vicinity. Rural health problems he says have changed little. Therefore primary health care should be directed at common health needs. The problem as he sees it, is the continuing absence of co-ordination among medical faculties and between them and other organizations and institutions. The consequence is that the primary health care delivery system in urban areas is not developed. This difficulty is sometimes compounded by Government policies and plans which do not harmonize. The university has frequently to play an adjusting role rather than an initiating one. According to him, in Jakarta, private practitioners are more sought after than those serving in Government Health Centres, perhaps due to the large number of private practitioners who outnumber those working in Government Health Centres by almost 10:1. Furthermore, he is sceptical that Government doctors who have to carry out administrative duties as well can effectively contribute to training in primary health care.

Prof. Tongchan began by making some general comments. He is of the view that all four papers show an underlying similiarity in the problems raised. The main stress has been on co-operation. However, while the papers put forward valuable proposals for university intervention in the primary health care delivery system, yet no explanation has been offered regarding the role and function of medical personnel and how they can be integrated in the medical curriculum stressing primary health care. Problems such as selection, training and assessment he feels are not adequately evaluated.

Prof. Tongchan concurs with the view that there is a need to change research policies to give emphasis to such concerns as practicability, relevance and compatibility with local or indigenous conditions and institutions. The planning of a national health care delivery system he feels must be comprehensive and the contribution of the social sciences in particular should not be neglected. The university he further adds should not play a substantive role in providing medical services. Such a role should be the major responsibility of the Ministry of Health.

On the question of co-ordination, Prof. Tongchan believes that it is necessary to develop an efficient mechanism of linkage among all organizations dealing with primary health care. In this he is of the opinion that the university should play a major part since university professors and doctors are generally respected and hence whose advice and suggestions more likely to be accepted.

Dr. Widodo Talogo feels that all four speakers have proposed different approaches to the training of primary health care personnel in the urban areas. In specific reference to Prof. Phoon's paper he asks whether his outline gives sufficient recognition to the role of the social sciences in public health care planning at the level of the university.

On Dr. Sunoto's proposal that the mother should constitute the main focus of training in public health care planning, Dr. Widodo asks whether this is possible in the case of working mothers.

In discussing Prof. Phoon's paper, Prof. Charn Sathapanakul thinks that the training programme on public health care at the University of Singapore as outlined is excellent. However, he feels that the Medical Schools should not only be responsible for moulding attitudes of students toward public health care but staff or faculty members as well — the latter he stresses is frequently more problematic. Concurring with a previous discussant, he explains that the Medical School should concentrate on teaching, research and consultative roles. It cannot and should not fully commit itself to meeting all public health needs. There are a number of constraints on the Medical School vis-a-vis what it is able to do in the area of public health needs. Some of them are: shortage of manpower and teaching staff, heavy teaching load, service to hospitals, budgetary and role constraints. There is therefore a need for the Medical School or Faculty to be selective and constrained in its efforts to promote public health care.

Speakers were then invited by the Chairman to respond to the discussants.

Dr. Sunoto in responding to the comment on the need for coordination, suggests that it could be effected by focussing on levels and areas.

On the question of leadership pertaining to the planning and delivery of a system of public health care, Dr. Sunoto is of the view that it should involve the university indirectly. He feels that the university should discharge its basic responsibilities first viz., teaching, research and service.

On the query about mothers who work, Dr. Sunoto explains that the fundamental concern should be to channel relevant information on public health care to them. Citing from his own experience, he explains that mothers generally know what to do in diarrhoeal complaints.

In responding to the discussants, Assoc. Prof. Dr. Ismail Saad reiterates the point that problems of health in urban areas are distinctly different from those in rural areas. For example, pollution, over-crowding and drug addiction are characteristic of urban centres. On the query about the definition and conceptualization of the term 'urban', Dr. Ismail explains that there is no fully acceptable criteria available.

He concurs with Prof. Tongchan's view that the Medical School or Faculty should provide consultancy services as a fundamental aspect of its activities. Faculty staff, he says, is usually limited and hence does not allow for an over-expansion of activities. Indeed he feels that over-expansion may lead to adverse consequences on research.

Answering Dr. Widodo's query about Community Health Projects in Malaysia, Dr. Ismail explains that there is no specially designed curriculum within the university for effecting them though Preventive Medicine is taught, but is is not community oriented in the real sense of the word. Expanding on his statement, Dr. Ismail says that universities in Malaysia are aware of what needs to be done in the area of primary health care. What have yet to come about are: proper organization, financial support and supportive technical facilities. There is also the need to increase the number of trainers to train the trainees.

Prof. Phoon in his response suggests that the term public health care is not new and has undergone re-interpretation from time to time. However, he explains that emphasis on public health care is much more marked in public policies today as exemplified by WHO. The lack of uniformity of interpretation of the term is a continuous problem. The concept 'urban' he explains should not be seen as a detached or isolated entity from that of 'rural'. There is always movement from the urban to the rural and vice versa.

He agrees that operational research is necessary for the effective implementation of a public health care system. Evaluation of the Government health and system ought to be made by the university though he cautions that it should be done with the agreement of the Ministry of Health and with their participation and cooperation. He stresses the importance of translating needs into concrete curricula and personnel development.

Turning to his Medical Faculty, Prof. Phoon explains that constant evaluation is being carried out of the curriculum, teachers and teaching methods with a view to making necessary adjustments. He recognises the complexity involved in teaching public health care. However, he stresses that the key concern should be to involve as many people and departments as possible such as clinical teachers, social health teachers, etc. Within his Faculty efforts are generally made to engage the expertize of sociologists, biologists, ministers and others.

Prof. Rachit Buri in his response asks a basic question viz., since universities deal with secondary and tertiary health care, is it feasible and possible to also deal with primary health care? If the answer is in the affirmative then the next question should be, How?

Posing further questions, Prof. Rachit Buri asks how attitudes toward the importance of primary health care could be changed. How do we reorientate students and staff toward meeting community health needs? Citing an example from schools where the concept of public health has been inculcated over a long period of time, Prof. Rachit Buri concludes that despite this, awareness of it is yet to be significant. Is this due to civic inertia he asks. As an after thought, he also expresses the fear that there may be possible areas of conflict in the delivery of primary health care such as between teaching and the provision of tertiary health care with primary health care.

Following the response of the speakers, discussion was opened to the floor.

Prof. Tongchan reiterates a point made earlier on in the discussion viz., that the provision of medical health services should be the main responsibility of the Ministry of Health. The University he believes cannot be a replacement for the Ministry of Health. It can of course complement the work of the Ministry and wherever possible work together with the Ministry in the delivery of primary health care and even utilize its facilities.

In offering his view, Dr. Ismail Saad explains that it is necessary to distinguish the two functions of teaching or training and service. He feels that the university has a responsibility in making available its expertize in the training of primary health care personnel. In his own university (Universiti Kebangsaan Malaysia) provisions are made for the training of both students and para-medical staff for the purpose of delivering primary health care in the rural areas. The Ministry of Health, he adds, has its own programme to train nurses and other paramedical personnel for work in the rural areas as well.

Dr. Molly Cheah observes that of the four components of primary health care only the curative appears to be emphasized in the discussion.

Dr. Alex Papilaya, however, is of the opinion that not only is co-ordination a problem in urban primary health care but frequently the health delivery system does not even complement or supplement the efforts of the Government.

Prof. Harsojo is of the opinion that the problem is not merely co-ordination between university and governmental efforts in the primary health care delivery system but the use of research findings as bases for policy formulation and implementation. In this respect, he asks what kind of mechanism may be instituted to ensure that research findings are adequately used for shaping the primary health care delivery system.

Mr. Jacks observes that there is an obvious need to engage the social scientist in planning a system of primary health care. He makes suggestion that there is much to be learned from social scientists vis-a-vis the social and cultural aspects of health care.

Dr. Rajakumar is of the view that the teaching of primary health care is made difficult simply because the university's medical faculty is solidly hospital based. No university, he further observes, has a Department of Primary Health Care. He suggests further that there are conflicts of interests involved. The sum total of all these have brought about different forms of inertia viz., university inertia, civic inertia and personal inertia. There is a need for a break-through he concludes.

Prof. Rachit Buri then complains about the tendency for some departments to take no interest of others except their own. The end result is the problem of effecting linkage and co-ordination.

In clarifying a point made earlier, Prof. Phoon explains that in Singapore, the Medical Faculty works through the Government District Health Centres. There is participation from everyone. Exchange and collaboration are constantly effect between the Government District Health Centres and the departments in the Medical Faculty.

Returning to the problem of definition, Prof. Okas maintains that the WHO definition of primary health care is: "essential health care made universally accessible to individuals and families in the community by means acceptable to them, through their full participation and at a cost that the country can afford." Another meaning given to the term, he explains, is first contact care. He supports Prof. Tongchan's view that the teaching of primary health care, including training, should mainly be done by government clinics and health centres. On the subject of changing the attitudes of students, he says it is difficult. To be effective he feels the Faculty itself should change first.

PART IV

UNIVERSITY CURRICULUM IN HEALTH-RELATED DISCIPLINES: AN EVALUATION

UNIVERSITY CURRICULUM AND BASIC HEALTH CARE IN INDONESIA: AN EVALUATION

Alex Papilaya* and R. Widodo Talogo**

Introduction

Medical education in Indonesia was developed since the pre-World War years. The main goal of the medical curriculum developed during these years has always been to train doctors who are able to cope with the health problems of the Indonesian people.

Medical curriculum may have changed from time to time because of the changing scene of health and medicine as well as the changing needs and demands of the government and the community towards the delivery of basic health care. Nowadays every faculty of medicine in Indonesia is concerned with the training of medical doctors who will be able to serve the Indonesian people with appropriate basic health care.

The Indonesian community is a multi-faceted community in terms of race, religion, education, socio-economic level, customs, beliefs, etc. The medical doctor who is going to serve such community should have the knowledge and skills to perform in such a way that the services he is rendering will be accepted by this multi-faceted community. The medical curriculum is expected to provide him with knowledge and skills he needs.

In this paper an evaluation is made of the existing curriculum of faculties of medicine in Indonesia and its relation to the delivery of basic health care. It also tries to identify subjects in the curriculum of other faculties in the University of Indonesia which are related to the delivery of basic health care and its linkages with the curriculum of the faculty of medicine. Finally suggestions are made for the improvement of university curriculum concerning the delivery of basic health care.

Problems of Basic Health Care in Indonesia

Indonesia with a population numbering 132 million in 1975 now ranks fifth among the world's most highly populated nations. 82.71 per cent live in rural areas. Two-third of the total population live on the islands of Java and Madura.

Most prevalent diseases are infections of respiratory organs, infections of the skin, diarrhoea, malaria, nutritional disorders and eye diseases. Communicable diseases still prevailing are cholera, framboesia, whooping cough, tetanus neonatorum, leprosy, diphtheria, D H F and filariasis. No smallpox cases have been registered since February 1972. Diarrhoea among children, infections of respiratory organs, disorders of digestive organs, heart diseases, tuberculosis and cancer are the main causes of death.

*Associate Dean, Faculty of Public Health, Universitas Indonesia, Jakarta, Indonesia
**Head, Department of Public Health, Medical Faculty, Universitas Indonesia, Jakarta, Indonesia

Inadequate understanding and insufficient awareness of health problems are due to the low level of education. Superstitious beliefs inhibit attempts to improve health conditions by modern means. Other factors affecting the health situation in Indonesia, among others, are bad environmental conditions like inadequate water supply, poor housing, conditions with overcrowding, insanitary excreta and waste disposal, and inadequate draining system.

Since 1969 the Indonesian government made conscious efforts to overcome these basic health problems by starting sound five-year development plans. In the first five year plan (1969-1974) stress was given to economic rehabilitation. Agriculture was given the highest priority. In the second five year plan (1974-1979) high priority was given to economic development with more attention to the social sector, including health.

The Indonesian health care delivery system is mainly based upon services rendered through health centres. Services rendered by the health centre are medical care, maternal health, family planning, communicable disease control, hygiene and sanitation, nutrition, health education, dental health, school health, community health nursing and collection of data for planning and evaluation purposes.

To speed up the development of health centres, rural water supply and family latrines, the President issued an instruction (INPRES) for the establishment of these basic health facilities. The INPRES includes construction of health centres, rehabilitation of existing health centres, purchase of health centre medical equipment and drugs, mobile health centres, motorcycles and bicycles for health centre personnel. The programme also recruits medical doctors and para-medical personnel to staff the health centres.

While the physical development of the health centres and the recruitment of manpower are quite impressive, low coverage and utilization of the centres remain a serious problem.

Studies have shown that there are many reasons for the low coverage. Some of the reasons are as follows:

1. Geographical distance.
2. Economical reasons.
3. Ignorance.
4. Psychological distance between providers and consumers.

These factors, together with the national development efforts in general, have motivated the government to look for a more effective approach for delivering basic health care to the rural community. It ultimately led the acceptance of primary health care as an approach to provide basic health care to the community, with suitable adaptation to meet specific local needs. Subsequent surveys, conducted in 1976, revealed that over 200 villages had ongoing primary health care activities started at their own initiatives. The Indonesian translation for primary health care is 'Pembangunan Kesehatan Masyarakat Desa' which literally means 'Village Community Health Development'.

Basic Medical Education in Indonesia

During the early fifties, the demand from the Ministry of Health was to have medical doctors at least one for each region. At that time a real shortage of medical doctors was felt and foreign doctors were brought in, mainly from West Germany and other European countries.

The Ministry of Education and Culture established 13 state faculties of medicine since 1950, the latest ones being the faculty of medicine of Brawijaya and Sebelas Maret (see Table 1). The number of graduating medical doctors per year increased from 688 in 1950-1959 to more than 800 since 1973. Starting 1972 the private faculties of medicine produced their first graduates.

The main contributing faculties of medicine, as seen in Table 1, are the three oldest faculties of the University of Gajah Mada, University of Indonesia and University of Airlangga. These three faculties contributed more than 60 per cent of all doctors during the period 1950 to June 1976.

The training of medical doctors in various faculties of medicine vary between six years and seven years. The number of medical students attending the 12 state faculties of medicine is presented in Table 2. The total number in 1976 is 9,296 with an average of 1,328 per study year.

The main body of medical students are in five faculties of medicine, North Sumatra, Airlangga, Pajajaran, Gajah Mada and Diponegoro, which comprises more than 50 per cent of all medical students. The number of medical students admitted to state faculties of medicine is increasing over the years. As shown in Table 3, the number of students admitted in 1974 is 1,028, 1,102 in 1975 and 1,093 in 1976. Total number of students applying to enter state faculties of medicine during this period is 27,873.

With a population of 132 million in 1975, the doctor-population ratio will be 1 : 13,105. A regency in Indonesia has a population of 40,000 to 60,000. This means that the Ministry of Education and Culture has at least met the demand of the Ministry of Health in providing medical doctors, although unfortunately the distribution of doctors throughout the country is a major problem. The ratio for certain remote areas is as great as 1:100,000.

In the seventies, another demand from the Ministry of Health came forward, in which it was stated that the basic medical education should be made relevant to the needs of the country. The Consortium of Medical Sciences made the following efforts to meet this demand. The following objectives for the medical education programme was set:

1. As strategic plans for the national system of health care delivery were developed by the Ministry of Health, early involvement of the educational system for manpower in health should be encouraged.
2. Sensitizing the medicial schools towards incumbent changes, was envisaged through a series of workshops, conferences, meetings and by sending key persons in medical education to visit various sites abroad.
3. The establishment of an early embryonic model to be considered as a learning site for further development.

4. A second model on a broader basis involving the total referral system was decided to take place at the Airlangga University. The new model will lead to better insight towards the development of a health science centre concept in which community medicine is placed as a central idea in the core-curriculum development in relation to other aspects of health.
5. The formulation of common objective(s) in medical education was tackled through the development of formulating general and specific instructional objectives in a series of conferences.

Since 1970 numerous individual attempts were made by the state faculties of medicine to develop their community medicine programme, either with or without foreign assistance.

By 1975 almost all faculties of medicine have established their own community teaching sites, each with a different emphasis, but all had made efforts to integrate the overall involvement of preclinical and clinical departments in the teaching of community medicine. Only two state faculties of medicine were not able to develop a community medicine programme. They were the Universities of Sriwijaya and Brawijaya. During these developments it became clear that unless the national health care system becomes formulated in more detail, much confusion may still remain in the education of doctors.

Table 4 reveals the relation of various community medicine programmes in the state faculties of medicine with the teaching of basic health care as well as other health related science subjects. Six state faculties teach their undergradutes subjects on basic health care, three teach only part of these subjects, two had no community medicine programme and no information was available of two others.

Three health related sciences, sociology, psychology and anthropology were taught in six faculties of medicine with some variations among the faculties.

Traditional medicine was not mentioned in all community medicine programmes, but public health administration was given by all faculties.

In 1975 the Ministry of Education and Culture establish the objectives of medical education in Indonesia. These objectives are as follows:

1. A doctor should conduct his medical profession in a health care system which must be in accordance with the government policy, guided by the Pancasila. He must be able to do the following:
   a. Recognize, formulate and set priorities of present and future public health problems and try to solve these problems through planning, implementation and evaluation of promotive, preventive, curative, and rehabilitative programmes.
   b. Solve health problems of the individual patient by utilizing clinical knowledge, skills and laboratory services. Using adequate observation and recording to identify, to diagnose, to provide care and treatment, to provide preventive measures, consults and to provide rehabilitation for the individual patient while

recognizing the physical, mental and socio-cultural aspects around the patient.

c. Utilize efficiently all other resources and manpower to improve the health status of the community.
d. Accept the role of team leader of the health team.
e. Be aware that a good health care system is an essential factor in the ecosystem which will improve the health status of the community.
f. Educate the community and have them participate in improving their health status.

2. A doctor should always improve and develop himself in medical sciences according to his needs. He should be guided by the principle that study is life-long.
3. A doctor should periodically evaluate his professional activities, be aware of the need to improve his knowledge, select appropriate educational resources and critically evaluate his own improvement.
4. A doctor should support the development of health sciences by participating in teaching, research, and searching for solutions of problems of the patient, community and health care system.
5. A doctor should maintain and develop his personality and attitudes necessary for the fulfilment of his profession, such as integrity, responsibility, reliability, interest and respect for human beings based on medical ethics.
6. A doctor should function as a creative, productive and open-minded member of the community, accept changes and is oriented towards the future, while educating and persuading the community to develop similar attitudes.

If one goes through these objectives it will be obvious that basic health care is not specifically mentioned. Only health education is mentioned in point 1.f. A broad interpretation of point 1.a can cover basic health care.

These objectives were made in 1975. At the same time the Ministry of Health just started their first surveys on primary health care in Indonesia. This illustrates that the Ministry of Education and Culture already predicted the future demands on health care in Indonesia. In 1981 the first batch of doctors with community medicine background will graduate.

University of Indonesia Curriculum

The University of Indonesia has ten faculties (see Table 5). An additional SEAMEO applied nutrition course is part of the courses offered.

The Faculty of Medicine and the Faculty of Public Health cover all subjects on basic health care. In the curriculum of the Faculty of Mathematics and Science, Faculty of Law, Faculty of Letters, Faculty of Psychology and Faculty of Social Science, subjects on basic health care are not mentioned. It is partly mentioned in the Faculty of Dentistry (4 subjects), Faculty of Technology (2 subjects), and Faculty of Economics (2 subjects).

Sociology, anthropology and psychology are more evenly distributed among the faculties. The Faculty of Dentistry and the Faculty of Technology do not cover these subjects.

Traditional medicine is mentioned in the curriculum of the Faculty of Letters (medical anthropology) and the Faculty of Social Science (sociology of health). Other faculties do not mention this subject.

Public health administration is mentioned in the Faculty of Medicine, Faculty of Public Health and Faculty of Dentistry.

This situation can create problems for the university especially in the setting up of interdisciplinary programmes in the community. Efforts done through the Tangerang Rural Development Project to integrate various disciplines in a community programme has shown several constraints. These constraints may have been cause by inadequate stressing of teaching of basic needs including basic health needs of the community.

The Faculty of Medicine has several departments. Besides undergraduate training it also provides postgraduate training. Not all the departments are directly involved in the teaching of basic health care. The departments directly involved are:

1. Department of Microbiology
2. Department of Nutrition
3. Department of Parasitology
4. Department of Public Health and Preventive Medicine
5. Department of Dermatology
6. Departmemt of Ophthalmology
7. Department of Psychiatry
8. Department of Surgery
9. Department of Obstetrics and Gynaecology
10. Department of Child Health
11. Department of Internal Medicine

Participation of those departments in the teaching of basic health care is illustrated in Table 6.

Health related subjects are taught by staff from the Faculty of Social Science and Faculty of Letters.

Subjects on basic health care are included in the curriculum of the Department of Public Health and Preventive Medicine (15 subjects), Department of Child Health (14 subjects), Department of Microbiology (7 subjects), Department of Internal Medicine (6 subjects), Department of Obstetrics and Gynaecology (4 subjects) and the Department of Parasitology (4 topics). The other departments cover less than three subjects.

The most common subject taught is nutritional disorders (5 departments), followed by nutrition (4 departments), infections of the respiratory organs including tuberculosis (4 departments), diarrhoea (4 departments), malaria (4 departments) and cholera (4 departments).

Unfortunately traditional medicine is not taught at the Faculty of Medicine but at the Faculty of Letters and Faculty of Social Science.

Suggestions for Further Development

After reviewing basic medical education in Indonesia and the efforts done by the Ministry of Education and Culture for the improvement of university curriculums, the following points should be considered:

1. Plan and further develop subjects in the university curriculum related to basic health care.
2. Further develop joint community programmes at university level for the delivery of basic health care.
3. Planning and development of university research programmes on basic health care problems.
4. Develop operational research programmes in Public Health emphasizing the delivery of basic health care.
5. Further involvement of the departments in the Faculties of Medicine in the teaching of basic health care.
6. Develop linkages and better relations between the university and the Ministry of Health.

The Consortium of Medical Sciences in Indonesia has the primary role in developing the medical education for the future.

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TABLE 1: NUMBER OF MEDICAL DOCTORS GRADUATING BY UNIVERSITY AND YEAR, INDONESIA, 1950-1976

University \ Year	1950-1959	1960-1969	1970	1971	1972	1973	1974	1975	1976 June	Total
State University										
1. SUMATERA UTARA	—	357	43	53	79	91	93	155	40	911
2. ANDALAS	—	78	15	27	35	50	12	57	48	322
3. SRIWIJAYA	—	8	12	13	23	37	48	41	9	191
4. HASANUDDIN	—	160	28	22	29	23	22	31	20	335
5. SAM RATULANGI	—	3	7	9	8	16	13	27	4	87
6. UDAYANA	—	—	1	2	3	13	18	42	17	96
7. GADJAH MADA	65	871	191	172	138	147	153	84	29	1850
8. DIPONEGORO	—	75	16	22	37	45	101	65	51	412
9. PADJADJARAN	—	267	78	50	102	82	61	97	50	787
10. INDONESIA	440	1324	58	153	156	187	231	103	56	2708
11. AIRLANGGA	183	1471	86	96	82	102	105	120	29	2274
12. BRAWIJAYA	—	—	—	—	—	—	1	2	—	3
13. SEBELAS MARET	—	—	—	—	—	—	—	—	1	1
Private University										
1. ISLAM SULTAN AGUNG	—	—	—	—	—	—	—	—	1	1
2. TRISAKTI	—	—	—	—	2	13	17	2	18	52
3. TARUMANEGARA	—	—	—	—	—	—	—	7	6	13
4. KRISTEN INDONESIA	—	—	—	—	1	3	12	5	8	29
Total:										
State University	688	4614	535	619	692	793	858	824	354	9977
Private University	—	—	—	—	3	16	29	14	33	95
All	688	4614	535	619	695	809	887	838	387	10072

Source: Data statistik mahasiswa dan lulusan. *Konsorsium Ilmu Kedokteran*, Jakarta, 1976.

TABLE 2: NUMBER OF MEDICAL STUDENTS BY UNIVERSITY AND STUDY YEAR, INDONESIA, 1976

University \ Year	1st	2nd	3rd	4th	5th	6th	7th	Total
1. North Sumatra	121	77	94	118	156	273	203	1042
2. Andalas	48	40	50	68	143	89	126	564
3. Sriwijaya	64	58	78	85	65	67	50	467
4. Hasanuddin	103	155	85	121	118	180	—	762
5. Sam Ratulangi	83	82	51	43	37	66	64	426
6. Udayana	99	64	87	72	66	34	88	510
7. Gajah Mada	190	152	141	130	125	242	—	980
8. Diponegoro	111	99	126	98	101	184	148	867
9. Pajajaran	160	155	90	141	152	178	154	1030
10. Indonesia	129	107	101	106	112	147	—	702
11. Airlangga	183	139	159	176	159	182	179	1177
12. Brawijaya	97	132	66	17	129	108	220	769
13. Sebelas Maret				No information				
Total	1388	1260	1128	1175	1363	1750	1232	9296

Source: *Data statistik mahasiswa dan lulusan*, Konsorsium Ilmu Kedokteran, Jakarta, 1976.

TABLE 3: NUMBER OF FIRST YEAR MEDICAL STUDENTS ADMITTED BY UNIVERSITY AND YEAR, INDONESIA, 1974-1976

University \ Year	1974	1975	1976	Total
1. North Sumatra	50	80	78	208
2. Andalas	40	40	42	122
3. Sriwijaya	46	50	47	143
4. Hasanuddin	68	102	97	267
5. Sam Ratulangi	45	56	71	172
6. Udayana	86	78	75	239
7. Gajah Mada	126	123	108	357
8. Diponegoro	97	78	88	263
9. Pajajaran	121	116	93	330
10. Indonesia	103	87	96	286
11. Airlangga	123	119	137	379
12. Brawijaya	75	75	82	232
13. Sebelas Maret	48	98	79	225
Total	1028	1102	1093	3223

Source: *Data statistik mahasiswa dan lulusan*, Konsorsium Ilmu Kedokteran, Jakarta, 1976.

TABLE 4: TEACHING OF BASIC HEALTH CARE AND OTHER HEALTH RELATED SCIENCES IN THE COMMUNITY MEDICINE PROGRAMME OF VARIOUS INDONESIAN FACULTIES OF MEDICINE

University / Basic health care and health related sciences	North Sumatra	Andalas	Sriwijaya	Hasanuddin	Sam Ratulangi	Udayana	Gadjah Mada	Diponegoro	Padjadjaran	Indonesia	Airlangga	Brawijaya	Sebelas Maret	Total
1. Nutrition	+	+	No Community Medicine Programme	+	?	No information	+	+	+	+	+	No Community Medicine Programme	No information	8
2. Safe water supply	+	?		+	?		+	+	+	+	+			7
3. Basic sanitation	+	?		+	?		+	+	+	+	+			7
4. Maternal and child care	+	+		?	?		+	+	+	+	+			7
5. Family planning	+	+		+	+		+	+	+	+	+			9
6. Common diseases	+	?		+	+		+	+	+	+	+			8
7. Immunization	+	?		+	+		+	+	+	+	+			8
8. Endemic diseases	+	+		+	+		+	+	+	+	+			9
9. Health education	+	?		?	?		+	+	+	+	+			6
Health related sciences														
1. Sociology	+	+	No Community Medicine Programme	—	+	No information	—	+	—	+	+	No Community Medicine Programme	No information	6
2. Anthropology	—	—		—	+		+	+	+	+	+			6
3. Psychology	+	+		—	+		—	+	—	+	+			6
4. Traditional medicine	—	—		—	+		—	+	—	+	—			0
5. Public Health Administration	+	+		+	+		+	+	+	+	+			9

Source: Partomo M. Alibazah, Editor, "The teaching of Community Medicine in Indonesia", Consortium Medical Sciences, Jakarta, 1975.

TABLE 5: TEACHING OF BASIC HEALTH CARE AND OTHER HEALTH RELATED SCIENCES IN VARIOUS FACULTIES OF THE UNIVERSITY OF INDONESIA, 1978

Basic health care and health related sciences \ Faculty	Medicine	Dentistry	Mathematics and Science	Technology	Law	Economics	Letters	Psychology	Social Sciences	Public Health	Applied Nutrition*
1. Nutrition	+	+	—	—	—	—	—	—	—	+	+
2. Safe water supply	+	+	—	+	—	—	—	—	—	+	+
3. Basic sanitation	+	+	—	+	—	—	—	—	—	+	+
4. Maternal and child care	+	—	—	—	—	+	—	—	—	+	+
5. Family planning	+	+	—	—	—	+	—	—	—	+	+
6. Common diseases	+	—	—	—	—	—	—	—	—	+	—
7. Immunization	+	—	—	—	—	—	—	—	—	+	—
8. Endemic diseases	+	—	—	—	—	—	—	—	—	+	—
9. Health education	+	—	—	—	—	—	—	—	—	+	+
Health related sciences											
1. Sociology	+	—	+	—	+	+	+	+	+	+	+
2. Anthropology	+	—	+	—	+	+	+	+	+	+	+
3. Psychology	+	—	—	—	—	+	+	+	+	+	—
4. Traditional medicine	—	—	—	—	—	—	+	—	—	—	—
5. Public Health Administration	+	+	—	—	—	—	—	—	+	+	+

*Not a faculty.

TABLE 6: TEACHING ON BASIC HEALTH CARE AND OTHER HEALTH RELATED SCIENCES IN THE FACULTY OF MEDICINE, UNIVERSITY OF INDONESIA BY DEPARTMENT AND FACULTY

Basic health needs and health related sciences \ Departments and Faculties	Nutrition	Microbiology	Parasitology	Public Health	Dermatology	Ophthalmology	Psychiatry	Surgery	Obstetric and Gynaecology	Child Health	Medicine	Social Sciences	Letters
1. Nutrition	+			+					+	+			
2. Safe water supply				+									
3. Basic sanitation				+									
4. Maternal and child care				+					+	+			
5. Family planning				+					+	+			
6. Common diseases													
— Infections resp. organs (TBC)		+		+						+	+		
— Infections of the skin			+		+					+	+		
— Diarrhoea		+	+							+	+		
— Malaria			+	+						+	+		
— Nutritional disorders	+			+					+	+	+		
— Eye diseases						+							
— Common injuries								+					
7. Immunization		+		+						+			
8. Endemic diseases													
— Cholera		+		+						+	+		
— Leprosy					+								
— Yaws					+								
— Tetanus		+						+		+			
— Diphtheria		+		+						+			
— Whooping cough										+			
— DHF		+								+	+		
— Filariasis			+										
9. Health education				+						+			
1. Sociology				+								+	+
2. Anthropology				+									
3. Psychology							+						
4. Traditional medicine													
5. Public Health Administration				+									

UNIVERSITY CURRICULUM IN HEALTH-RELATED DISCIPLINES – AN EVALUATION – CASE OF MALAYSIA

Kylasa Somasundaram* and Teoh Soon Teong**

Introduction

When Malaya achieved Independence in 1957, the health services underwent a process of reorganisation and in this process an increase in the coverage of the population, particularly the rural population, by the health services was planned. To allow this development to take place, a large number of doctors and an even larger number of medical auxiliaries were required.

With the formation of Malaysia subsequently, the need for such personnel became even greater. At that time, the number of Malayans graduating as doctors from the medical school in nearby Singapore together with some from other overseas universities was not enough to fulfill even the barest needs of this projected development in the health services.

It was imperative, therefore, that a medical school be established in the country itself. This was to happen in 1963 when the building of the University of Malaya Medical Centre in Kuala Lumpur started. The Centre was completed in 1968 and by June 1969, the first batch of 69 doctors were produced for the country. To date, it has produced 1,041 doctors for the country.

Health Needs

The University of Malaya Medical Centre consists of a Faculty of Medicine and a contiguous University Hospital. Right from the outset, the aim of the Faculty of Medicine had been to produce health professionals in order to cater for the health needs of the country.

In this context, the health needs of the country were and are still envisaged as consisting of three inter-related areas. These are:

- an area concerned with the *disease* and its prevention and cure,
- an area concerned with the setting up of *facilities* both in the rural as well as the urban regions from which to launch preventive programmes and provide medical care, and
- an area concerned with the provision of sufficient *personnel* in various categories (doctors, nurses, sanitarians etc.) in order to man the facilities.

Combining the aim of the Faculty with the health needs of the country as perceived above, the Faculty designed its curriculum in order that the health

*Professor and Dean of Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia
**Attached to Department of Social and Preventive Medicine, Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia

personnel it will produce will be able to serve the population adequately in its needs for medical and health care. Thus the curriculum was and still is, as far as possible, to be:

— locally-oriented, competency-based and with a heavy "preventive" emphasis,
— with an equal balance between practice under urban as well as in rural conditions,

and the educational system of the Medical Centre would attempt to produce health personnel in as large a number as is possible without compromising its strive for quality and "standards".

Educational Programmes

The University of Malaya Medical Centre consisting of the University Hospital and the Faculty of Medicine conducts four categories of training programmes, viz. nursing training and medical laboratory technologist training programmes, undergraduate medical programme and a post-graduate medical programme.

The nursing school provides a basic as well as a post-basic training programme. From its inception in 1968, a total of 379 nurses has been trained via the basic programme. The post-basic programme which trains nursing educators (nursing tutors), nursing administrators and specialist nursing tutors was started in 1967. To date it has produced 114 educators, 42 administrators and 18 nursing tutors in the field of midwifery and maternal and child health.

The medical laboratory technologist training programme, which started in 1966, has produced 198 laboratory technologists of whom 140 have reached the advanced level of training. They work mainly in the Faculty and the University Hospital.

Postgraduate medical programmes in the Centre are of two types. A medical officer training programme offers a 4-year programme for post-internship doctors who are interested in specialising in the various fields of medicine. After acquiring their postgraduate qualification, some of these rejoin the Centre as academic staff of the Faculty. Apart from this, three full-time degree courses are conducted by the Faculty of Medicine in the fields of public health, pathology and psychological medicine. It is in these three fields of medicine that an acute shortage of personnel is being experienced by the country. Since its inception five years ago, the Faculty has produced 34 doctors specialising in the field of public health, 6 pathologists and 7 psychiatrists.

The bulk of the teaching carried out by the Faculty is in the undergraduate medical programme. Producing an average of 110 doctors a year, the Faculty has since its first graduating class in 1969, produced some 1,041 doctors for the country. Since this is the most important of the Faculty's training programmes, it is proposed here to demonstrate how the Faculty attempts to produce doctors for the country — doctors who are especially prepared to meet the health needs of the community.

Undergraduate Programme

The educational goal of the undergraduate programme is that after completion of the medical course in the Faculty, the graduate should:

- be equipped with adequate knowledge and skills in the field of medicine,
- exhibit proper attitudes to his patients and the community he serves,
- be able to function efficiently both in sophisticated urban as well as simple rural health care facilities,
- be able to conduct both preventive and curative health care programmes,

at the level of the first post-internship year.

To prepare the medical student in order that he may achieve such goals, a five-year medical programme is conducted, not counting year zero which is the pre-medical year to which weaker students are admitted so that they may have remedial courses in science before being admitted to the medical course proper.

It is accepted that the undergraduate medical course should be made up of a balance between curative as well as the preventive aspects of medicine. This is because, as we have seen, a large proportion of the health needs of the community are for programmes in the prevention of communicable and other diseases in the community. It is also accepted that the preventive aspects of the undergraduate medical course are mainly community-based, i.e. doctor — community, whilst the curative aspects are mainly individual-based, i.e. doctor — patient. It is proposed here that a resume of the courses in the preventive aspects of the medical course be given as the curative aspects are in general similar in various countries and are thus quite familiar to most.

Programmes of Social and Preventive Medicine

On analysis, it was accepted that two large blocks of knowledge should be learnt by the potential doctor. These are a knowledge of the patterns of disease prevalent in the country and a knowledge of the communities (rural and urban) in which he is going to work upon finishing his internship.

In order to teach these blocks of knowledge, three categories of programmes are formulated, viz.:

- *basic courses* by which are meant the foundations and tools which are necessary to start with,
- *"compound courses"* which are courses which require the use of knowledge gained from the basic courses together with new material, and
- *field programmes* which serve to allow the potential doctor to apply what he has learnt from the courses in the classroom and during which he is exposed to the communities as well as the structure and function of the health care delivery systems in which he will work.

Basic Courses

The three basic subjects are considered to be epidemiology (which is conducted in the second year of the medical course), sociology (which is run in the third year, when students are meeting patients for the first time in this their first clinical year) and biostatistics — which is split into four smaller courses, viz.:

- descriptive statistics in the first year,
- inferential statistics in the second year,
- health and vital statistics in the third year, and
- survey methods, also in the third year.

The Third Year Programme

By the middle of the third year of the undergraduate medical course, the potential doctor would have covered almost all of the basic courses.

During the second half of the third year, he is given courses in nutrition, environmental sanitation and health education — the first three of the "compound courses". These three subjects are considered of importance as they have a bearing on the health problems of the country, namely:

- marginal nutrition and frank malnutrition in the rural areas as well as in urban slums for which a nation-wide applied food and nutrition program has been started,
- a lack of sanitary water supplies, excreta and waste disposal systems in many rural and semi-urban areas, and
- a need to bring information about health, disease and preventive procedures to the communities.

By the end of the third year, the potential doctor, then would have had gone through the six basic courses and three compound courses. Together with the basic course on survey methods (which is conducted towards the later part of the third year), certain aspects of rural life are discussed, for example, the possible problems of rural folk, the health services in rural areas, rural life style (as different from urban life style) and the administrative structure in rural districts. These courses cumulate finally in the first field programme — the rural health survey.

The main objective of the Rural Health Survey is to expose the potential doctor to a rural community. He will endeavour, during the conduct of his survey in his assigned village, to learn about people and their problems. The third year medical class is divided into four "station groups", each group is subdivided into four teams of eight. Each team is assigned a village. Putting to use their knowledge gained from the basic and compound courses, the team designs a survey instrument (on population census, excreta disposal, water supplies, housing, attitudes towards health services, nutrition, household income/expenditure, etc.) and carries out the survey in the village. The team compiles, analyses and presents the data collected in a team report on the village. When the survey period ends, the teams are debriefed back in the Faculty and comparisons and contrasts between villages studied are made so that a wider picture of the rural areas in cross section may be seen by the class as a whole.

One other field exercise is also held in the third year in conjunction with both the "compound course" on health education as well as the rural health survey. At the end of the course on health education, the students design, develop and prepare (with the aid of the Faculty's instructional media services) a health education package. This is validated both in the Faculty as well as in the first few days of the rural health survey. If proved successful, the students carry this into the villages and show them to the villagers utilizing help from the field services of the government Department of Information and with authorisation from the local medical officer of health. This exposes the student to the multidisciplinary approach to solving problems in these areas.

The Fourth Year Programme

Three more "compound courses" are conducted in the fourth year viz. maternal and child health (with participation from the Departments of Social and Preventive Medicine, Paediatrics, and Obstetrics and Gynaecology), population and ecology, and public health problems.

The course on public health problems is conducted as a series of student-organised seminars on suggested subjects. These ranges from epidemiology of coronary heart disease to accidents to environmental pollution. These are subjects which span various disciplines and in the preparation for these seminars, the students see the inter-relationship between medical as well as non-medical disciplines playing a role in the health of the community.

Throughout the year, family case studies are conducted. In this field programme, patients are selected from the University Hospital and small groups of students study them in depth. Home visits are made and the students obtain an idea of urban residential environments — particularly those in the lower socio-economic groups — and try to relate the environment to the patients' illness where applicable. Patients in this programme are usually selected to illustrate some social aspect of medicine, e.g. the patient needing some form of after-care, or the patient with an injury sustained during his work in a factory, or the terminal cancer patient. Having seen the problems in rural areas, the students are now exposed to the urban community and its problems.

At the end of the fourth year, another field programme is conducted — the District Health Survey. In this programme, the students of the fourth year class are divided into groups of about sixteen and each group is assigned a rural health district (Peninsular Malaysia is divided into some 54 rural health districts) and during the two weeks in this rural health district, the group observes, interviews and learn all they can about the health care delivery systems therein. These would include not only the governmental district hospitals and rural health units, but also private clinics, estate medical services, voluntary groups engaged in certain aspects of health work (e.g. the Red Crescent Society) as well as the work done by practitioners of traditional or indigenous medical systems.

The main objectives of this field programme is to acquaint the potential doctor with the structure and function of the health service in which he is

likely to be working during his post-internship years. It will also expose him to the work done by various categories of staff in these services and how they relate with each other as well as to other health care delivery systems not within the governmental fold.

At the end of the programme, the groups are debriefed so that a wider picture of the various districts studied by the class may be seen. This brings out contrasts between well-served districts with large compact populations and the remoter, less populated as well as less well-served districts. The problems faced by health staff in the districts studied are also discussed. It is expected that this exercise will prepare the potential doctor for his future work and will prevent time being lost in trying to figure out the system of health care delivery when he is posted to such districts after internship.

The Final Year Programme

The final year programme includes a field posting to a district hospital in Kuala Langat some 50 miles from the Medical Centre for a period of five weeks. In this posting, the potential doctor puts to use all the knowledge and skills he has learnt from both the curative and preventive aspects of the undergraduate medical course in a rural setting. He spends time in medical, surgical and obstetrics wards taking care of in-patients. He is also posted to outpatient sessions. For one of the five weeks, he is posted to the local health unit and participates in the work carried out by various categories of staff in the unit.

On each Saturday during this programme, a comprehensive and continuing health care module of instruction is carried out. At each session, a patient is selected from the hospital and discussed in detail where the utilisation of resources in the district is explored for the continuing care of the particular patient. This serves to illustrate to the potential doctor what can be done with resources available in the rural district and that he should not think all the time of sophisticated measures available only in large urban centres except as a last resort when it is decided to transfer the patient. Even if this should occur, he should consider whatever follow-up care is necessary and how this can be achieved in the rural locality.

This field programme — the Kuala Langat District Posting — is still in its infancy as it had only been formally organised with clearer educational objectives only in 1978. The Faculty is waiting currently for the rotation of medical student groups to finish so that an evaluation of the programme can be done.

Throughout the clinical years (third, fourth and final), students also make visits or spend short periods of time working in certain existing ongoing community health programmes in the country. They visit homes for the aged or handicapped in conjunction with their clinical clerkship of patients in the University Hospital whose after-care requires placement in such homes. Students are also posted to the Leprosarium and the National Tuberculosis Centre for short period.

Medical Curriculum and Health Needs

From the foregoing it can be seen that in the training of future doctors for Malaysia, the curriculum of the Faculty of Medicine, University of Malaya does take into consideration the health needs of the country.

The curriculum has a balance of the curative and preventive aspects of medicine, rural as well as urban communities and their problems, the simple rural health care facilities as well as the sophisticated urban hospitals and also a balance of in-house as well as field programmes.

This has allowed the Faculty to produce multi-potential or general-type doctors who are capable of working in all sorts of health care programmes in all parts of the country.

Problems

In trying to implement the curriculum as pictured above, a number of problems are experienced.

One major problem is interest and motivation of students. The picture of a doctor a medical student has is a person in a white coat with a shiny stethoscope working in an ultra-modern hospital. He is not prepared to view patients as coming from a community and that community ills have also to be treated. Preventive programmes are seen as almost at the fringe of medicine and not worth bothering about. Thus although the curriculum is planned to provide a balance between preventive and curative aspects of medicine, this is not appreciated by the students, who consider it all as a chore which has to be done. However, in conversations with graduates who are currently serving in the health units around the country, it has been found that, generally, appreciation of the medical curriculum, especially the preventive aspects, comes after graduation and not during training.

Another problem is in the availability of staff who are enthusiastic about teaching preventive medicine or who are willing to accompany students into the field for even short periods. It is understood that this seems to be quite a universal problem and not much can be done about it at the present moment.

One other problem is in the field of evaluation. Student assessment and eventual certification as a graduate has occupied most of the Faculty's time. However it is being realised that in the implementation of an instructional programmes not only has one to certify that a student has achieved the objectives of that programme, but the programme as well as the teacher should be evaluated in terms of its relevance and quality of communication. This unfortunately has not been done formally for all educational programmes in the Faculty. However a formal evaluation programme for the Kuala Langat District posting is being conducted involving both teacher as well as student opinions.

The follow-up evaluation of the Faculty's graduates into their job postings also has not been formally conducted. However, during the Rural Health and District Health Surveys, the accompanying staff members do talk with the personnel manning the rural health services, some of whom are the

Faculty's graduates. From these informal conversations, problems are seen, relevance of their undergraduate training with respect to their current jobs are discussed and any change in the work environment is noted. With the help of such feedback, courses and emphases have been reorganised.

SUMMARY

In this paper, health needs of Malaysia are briefly presented and the curriculum of the Faculty of Medicine, University of Malaya, particularly in the preventive aspects of medicine is outlined. The relationship between health needs and training programmes of the Faculty are shown. Certain problems related to the implementation and evaluation of the Faculty's instructional programmes are cited.

UNIVERSITY CURRICULUM IN HEALTH-RELATED DISCIPLINES: AN EVALUATION – SINGAPORE

Wong Poi Kwong*

General Considerations

Demands and Needs

In the past fifteen to twenty years, there has been a growing discontent arising out of the fact that in spite of the sophistication of our understanding of diseases, not enough attention has been given to the delivery of health care to the individual. As has been stated in the preliminary paper by the RIHED Secretariat, "so far basic health needs of a large number of the population in Asia and elsewhere have not been met." These prime needs may be summarised as follows: improvement of hygiene and nutrition and eradication of infection and infestation (parasitism). However, it is a common problem for most countries that what is needed is not necessarily what people want. For example, out of this set of prime needs it is often the case that people will choose the eradication of infection as their most important desire, and even then in a very personal sense. That is, they want personal attention and care when they are sick and are not really concerned whether sickness prevails in the community so long as that does not deny them the services of personal physician. The sick individual wants his own doctor to give him the ultimate in modern medicine, while being sympathetic and alive to his social problems at the same time. Again, the severely ill individual wants hospital care, with teams of experts to diagnose and treat him. These demand for personal care, having social, economic and political weight, often result in a pattern of health care delivery which does not conform to the priorities of the health needs. Again, unless these needs are translated into a personalised form it is difficult to fulfill those which require preventive measures, especially where the co-operation of the public is essential for success, and where the benefits of the preventive measures are slow in being realised.

There is thus a constant competition between demands and needs for limited finance, manpower and other resources.

A University's Response

How does a university respond to these needs and demands? The first step consists of indentifying those individual and health needs that are relevant to the milieu in which the university exists. In this process, factors such as demographic patterns of the population, its socio-economic factors, its scientific and technological development, the patterns of disease as elucidated through morbidity and mortality studies, the attitudes of the "consumers" and the "providers" of health care, must all be taken into account.

The next step comprises defining the goals of medical education in the light of these identified needs (or redefining if they have been defined before). This is an important step as it then enables an evaluation of the curri-

*Professor and Dean, Faculty of Medicine, University of Singapore, Singapore

culum to determine whether modification is needed to keep the curriculum current with these goals, whether there must be adaptation of the teaching-learning process and whether reorganisation of the teaching institution is necessary to facilitate the changes found to be necessary.

There may be factors beyond the control of the teaching institution, which may affect the response it makes to achieve these desired goals. Such factors may be the existing pattern of professional practice, governmental and non-governmental agencies, professional societies and associations, which may modify the response.

However, in spite of differences between countries and regions in the operation of all these factors, it is believed that there should always exist a basic training common to all. It is generally accepted that such basic training should lead to the production of a polyvalent individual who may specialize afterwards.

The Particular Case — Singapore

Historical Backdrop

Now in the description of how this applies to Singapore, I will be drawing examples mainly from the medical school, as this is what I am most familiar with, though where relevant, I will point out the applications to other health related disciplines. Furthermore, as the theme of these discussions centres around the role of the universities, it is pertinent to note that in Singapore only the medical, dental and pharmaceutical personnel undergo university training. Nurses, midwives, laboratory technicians, environmental sanitarians and other members of the health team are not within the purview of the university, except that there are now graduates who have taken a degree course in science who are turning to careers in laboratory technology.

In order to appreciate the role of the University of Singapore in the development of the teaching and training of health personnel, a quick glance back over the history of the medical school will be helpful.

In 1905, the Government of the Straits Settlements (in effect the British Government) decided to establish the Straits Settlements College of Medicine, after considerable pressure from local merchants who had made a sizable collection from the populace. From those early beginnings, when the school catered for only a handful of students, there has gradually developed a course of training, in which the emphasis has been mainly on the treatment of common diseases with part of the time spent in the study of the prevention and control of locally endemic diseases. This has been the common feature of the curriculum of most medical schools and the modifications over the years have consistently been directed towards translating the greater and greater amounts of scientific knowledge into effective action for the prevention and treatment of ill health in the individual and the preservation of both his physical and mental health. These have always been the major objectives of the medical profession.

However, in the past, the identification of health needs was not taken as a conscious step in the design of the curriculum for the medical school. In the early years, the school was under the British colonial government and a natural consequence was the fashioning of the curriculum to the pattern already established in British medical schools. When the University was established in 1949, it was by a merging of the medical school, then in its 44th year of existence, and the Arts and Science College, then in its 24th year. The dental school was at that time a department in the medical school.

The Incubus of the Past

Even with the establishment of the University as an autonomous institution of higher learning, the curriculum was no different from before. In fact the equivalence of the curriculum to the other leading medical schools in the world was a matter of pride and self congratulation. This has led inevitably to the introduction into the curriculum of more and more information accrued as a result of scientific and technological developments in order that students might be taught how to use these to their full capacity and to apply these for the benefit of the individual patient. However, we have now come to realise that unless a continuous process of evaluation takes place of the elements of the curriculum, it is possible to so overload the undergraduate student as to defeat the purpose of the course, which is to produce the well-rounded, multi-potential, thinking, caring doctor.

Recent Developments

In recent years there have been curriculum revisions with this in mind. Left to themselves, departments hardly ever recast their instruction except to incorporate newer information. Curriculum revisions have therefore had to be brought about by Faculty curriculum committees composed of representatives from different departments so that the final result would be a balanced one. The last comprehensive revision was implemented in 1971. We are now in the process of evaluating the consequences of that revision and examining whether the curriculum needs further revision. This is being done by questionnaires which are being sent to all our graduates of the last five years. (A sample of this is given as Appendix A). At the same time departments are being asked to make statements of their objectives where they have not already done so.

I would suspect that one finding of this evaluation might be that the student has usually been the last person to influence curriculum planning, though it is his behaviour we are seeking to modify and change. Though it is essential to determine what the student already knows when he enters medical school as it is the foundation on which all new learning will be built, we have not done so. The only certain thing we know about our students is their intellectual ability and the fact that they all have a strong personal desire to become doctors.

However, the student's non-intellectual characteristics do appear to be among the determinants of their ability to complete the medical course. So far the curriculum has failed to take these aspects into account and to encourage emotional as well as intellectual maturity though there is no doubt that

our students' emotional growth is rapid. Some of the information about the students' desires and motivation and their interest in people is already possessed by the teachers and principals of the schools from which they come. Perhaps this information should be used more in the process of selection as well as a basis on which to guide and help our students through the course.

Again our basis of intellectual measure is the 'A' level examination with requirements that Chemistry, Physics and Biology are passed at certain levels and thus we force the students to specialize early. The curriculum of these subjects in school is not designed for those who are going to do medicine but for those who are going to study pure science at the University. This system discourages the late developer who decided to do other subjects earlier, for it is difficult for him to change in mid-stream though certain exceptions have been known to occur. Perhaps there should be a broader preparation at pre-university level without encouraging specialisation and with stress not on facts but on principles and the logical development of ideas. This might result in intellectually able students, well equipped socially to deal with their fellow men, who can bring scientific ability and skill to the help of the community in health and disease.

Still taking the student as the centre, another criticism might perhaps be that the teaching approach is still heavily authoritarian and ideas of allowing the student to mould the course by "free choice" have not yet been introduced. A better curriculum which would draw the student out might be one that on occasion allows teaching to be built around the interests and problems of the student as a result of his day-to-day experience. We should perhaps develop a course in human biology to be introduced in school and then built up in the University, dealing with the principles of biochemistry, physics, biology and sociology. Then, not only medical students but other health personnel, such as nurses, and others who are going to deal with people, might take this course with benefit. Such a course might take the student into one or two topics of his choice and impart a broad statistical and scientific outlook to biological studies.

Since no individual can know all the disorders that affect man and all the detailed facts that are known about disease, our curriculum can only give the student examples of the types of disorder and of the factors involving health and disease and leaves it to the student to transfer his knowledge to those aspects of medicine which will become his special interest. The instruction is in the basic approaches to and experiences of health and disease. It tries to do so in the context of the profession and society but I am afraid only as they exist at present and not as they are likely to be in the next 20 or 30 years.

Again our teaching has been extensively hospital orientated, as a result of the teaching traditions. What has militated against change has been the prestige attached to a hospital based training since hospital based research has contributed so much to advances in treatment.

All is not dark, however. We have laid stress on the importance of the community and its social aspects and I believe we are moving towards teaching students at a community clinical centre to which patients will be brought for teaching and from which they will return home when teaching is over. At

a later stage, students could go with a tutor to be taught clinical work in patients' homes under supervision. Thus the hospital dominated curriculum should gradually give way to one where the students get out into the community much more.

The present curriculum favours large and powerful departments which have been strengthened by the practical or research service they have rendered rather than their usefulness to teaching. These departments fulfill many other needs and as they have developed they have contributed a great deal to knowledge but less to teaching. Creation of academic departments tends to promote research rather than teaching. Many departments have able individuals who have given a great deal to their subject but many others have also resorted to the device of claiming a large number of curriculum hours as a means of enhancing the departmental status. Thus they have tended to distort the importance of their subject in the teaching of medicine as a whole, and the curriculum is regarded as a field for political manoeuvre rather than as an effective teaching instrument.

Prospect

We hope that our efforts will redress the defects in the existing curriculum which have been largely due to the desire to satisfy departments, ignoring the essential ingredient, the student. We hope that the areas which are left to individual teachers will become less large and less vague so that the freedom will diminish for individual teachers to substitute their own objectives for those of the course. We hope that in time we will be able to define the characteristics we expect of our graduates and qualified doctors.

When the curriculum has been sufficiently modified to have a broad appeal with only certain areas of knowledge studied in depth, the length of the course might be reduced considerably. The graduates can then have graduate training in the specialty of their choice if they so wish. The benefit to the country and its health services from early release of the students under this shortened curriculum does not need elaboration.

What might remain as a hindrance to quick change may well be the glamour which has traditionally attached to specialisation. This in the past has moved a majority of young graduates to aspire to work in sophisticated medical institutions in urban areas delivering complex and costly health care to limited segments of the population. It may well be that until attitudes change and until the health system as a whole is so organised as to provide support for primary health care and to enhance its further development, that graduates of a less specialised system of medical education will try everything possible to make good what they will imagine to be the deficiencies of the system.

An important component, then, of any curriculum which seeks to produce graduates who can deliver health care to meet basic health needs must be learning experiences which will motivate these graduates to this end.

APPENDIX 'A'

CURRICULUM REVIEW QUESTIONNAIRE
Faculty of Medicine
University of Singapore

November, 1978

Dear Dr.

Our Medical Faculty is in the process of reviewing the medical undergraduate curriculum. We would like to request your kind co-operation in our endeavour. One of our major concerns is the relevance of the curriculum to the tasks performed after graduation. The Curriculum Review Committee is therefore collecting data on the work performed by recent medical graduates and their impressions of the undergraduate curriculum.

Could you please provide us with the details as concern yourself on the attached questionnaire. Please be assured that your reply will be kept strictly confidential and used only within the medical faculty. In this regard, you may if you wish, remain anonymous.

Kindly return the completed form in the pre-paid self-addressed envelope at your earliest convenience.

We thank you for your kind co-operation.

Yours sincerely,

Yeoh Teow Seng
Chairman
Curriculum Review Subcommittee

QUESTIONNAIRE SURVEY

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Name (Optional): _____ Serial No: ☐☐☐

Date of graduation: _____ 19 _____
month year

1. Housemanship postings: (Circle the appropriate code number)

1st posting: 1 2 3 4 5 6 7 8 (If 8, specify: _____) 1 ☐
2nd posting: 1 2 3 4 5 6 7 8 (If 8, specify: _____) 2 ☐
3rd posting: 1 2 3 4 5 6 7 8 (If 8, specify: _____) 3 ☐
(If appropriate)

Code: 1 = Anaesthetics
2 = Ear, nose & throat
3 = Medicine
4 = Obstetrics & Gynaecology
5 = Orthopaedics
6 = Paediatrics
7 = Surgery
8 = Other (please specify)

2. Post housemanship experience (Circle the code number that best describes your type of work)

Year 1: 1 2 3 4 5 6 7 8 (If 8, specify: _____) 4 ☐
Year 2: 1 2 3 4 5 6 7 8 (If 8, specify: _____) 5 ☐
Year 3: 1 2 3 4 5 6 7 8 (If 8, specify: _____) 6 ☐
Year 4: 1 2 3 4 5 6 7 8 (If 8, specify: _____) 7 ☐
Year 5: 1 2 3 4 5 6 7 8 (If 8, specify: _____) 8 ☐

Code:
1 = Armed forces
2 = Environmental Health
3 = Hospital Clinical Work
4 = Hospital non-clinical work (no direct contact with living patients)
5 = Primary Health Care (e.g. Government Out-Patient Department)
6 = Private Practice (General)
7 = Private Practice (Specialised)
8 = Other (please specify)

3. Have you gained any postgraduate medical degree or qualification? (Circle the appropriate answer)

No / Yes 9 ☐

If yes, circle code number describing your speciality. 10 ☐

1 2 3 4 5 6 7 (If 7, specify: _____)

Code:
1 = Anaesthesia
2 = General Surgery
3 = Internal Medicine
4 = Obstetrics & Gynaecology
5 = Paediatric Medicine
6 = Public Health/Preventive Medicine
7 = Other (please specify)

RETROSPECTIVE ASSESSMENT OF THE MEDICAL UNDERGRADUATE CURRICULUM

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The following questions are designed to try to elicit how relevant and valuable you think your undergraduate medical course was, with respect to your postgraduate experience. Please circle the appropriate number for each question.

4. How well do you think your undergraduate course, generally, prepared you for your postgraduate career.

1	2	3	
quite well	not too badly	rather poorly	11 ☐

5. How adequately were the following aspects of medical care dealt with?

	Very adequately	Fairly adequately	In-adequately	Don't know	
i) Dealing with an individual patient's problems (including psychological and social aspects)	1	2	3	4	12 ☐
ii) Practical experience of therapeutic and diagnostic procedures	1	2	3	4	13 ☐
iii) Dealing with patients in situations outside the hospital	1	2	3	4	14 ☐
iv) The use of ancillary social and welfare services	1	2	3	4	15 ☐

6. In terms of your own learning experience, how would you rate the amount of time devoted to the following methods of teaching in your undergraduate course.

	Excessive	About right	Insufficient	
1. Lectures	1	2	3	16 ☐
2. Bedside Clinical teaching	1	2	3	17 ☐
3. Laboratory Practical classes	1	2	3	18 ☐
4. Small group discussion (or tutorials)	1	2	3	19 ☐

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5. Outside faculty, outside hospital teaching (e.g. Field work, General Practice posting)	1	2	3	20 ☐

7. Please give your assessment of the time allotted to exposure to the following subjects:

	Excessive	About right	Inadequate	Don't Know	
Anaesthetics	1	2	3	4	21 ☐
Anatomy	1	2	3	4	22 ☐
Bacteriology	1	2	3	4	23 ☐
Biochemistry	1	2	3	4	24 ☐
Dermatology	1	2	3	4	25 ☐
Ear, Nose & Throat	1	2	3	4	26 ☐
General Practice	1	2	3	4	27 ☐
Medicine	1	2	3	4	28 ☐
Obstetrics & Gynaecology	1	2	3	4	29 ☐
Ophthalmology	1	2	3	4	30 ☐
Orthopaedics	1	2	3	4	31 ☐
Paediatrics	1	2	3	4	32 ☐
Parasitology	1	2	3	4	33 ☐
Pathology	1	2	3	4	34 ☐
Pharmacology	1	2	3	4	35 ☐
Physiology	1	2	3	4	36 ☐
Psychological Medicine	1	2	3	4	37 ☐
Radiology	1	2	3	4	38 ☐
Social Medicine & Public Health	1	2	3	4	39 ☐
Surgery	1	2	3	4	40 ☐
Venereal Diseases	1	2	3	4	41 ☐

8. Thank you for your help in completing this questionnaire.

If there are any points you would like to make regarding the undergraduate curriculum, please state them here. We would greatly appreciate frank comments on deficiencies, irrelevant aspects, limitations etc.

UNIVERSITY CURRICULUM IN HEALTH-RELATED DISCIPLINES: AN EVALUATION – CASE OF THAILAND

Avudh Srisukri*

Socio-Cultural Background

Thailand is one of many developing countries in Southeast Asia, with a population of approximately 45 millions (in 1976), 85 per cent of whom live in rural areas.[1] The number of males is slightly greater than that of females. In 1970 about 45 per cent of the population were under 15 years of age and 3 per cent were 65 and over. The median ages of the population were 17 and 19 years for the whole kingdom and for municipal areas respectively.[2] The rate of population increase was about 3 per cent in 1972, and 2.6 per cent in 1976.[3] Thailand has a very large metropolis in Bangkok, with a population of almost 5 million. The next largest city is Chiang Mai, with about 150,000 people. Apart from a few fair sized towns (such as Korat in the North-east and Haadyai in the South), the balance of the population is for the most part to be found in some 50,000 scattered lowland villages, each housing a few hundred people or less. Although there is a good system of major roads throughout the country, plus railroads connecting major regions, the secondary and tertiary roads and other communications are very limited. Thick jungle mountainous areas and seasonal flooding also restrict communications and transportation in many regions. The telegraph service between major centres is good, but the telephone service is inadequate.

Buddhism, the national faith, is followed by about 95 per cent of the population. It has had a profound influence over the culture, arts, tradition, character and way of living of the vast majority of the Thai people, who by tradition have thus respected the ideals of peaceful and friendly tolerance and moderate behaviour. But of more recent years, as has happened elsewhere in the world, there has been some erosion of the traditional influence of religion on the national character and behaviour.

In rural areas, and to a lesser extend in the towns, Thai culture remains much as before, except for changes in attitudes (mainly among younger people) arising from external influences and the changing times in which we all live. Another factor, at least in Northern Thailand, which bears directly on cultural patterns and indirectly on public health, is the sharp increase in the number of young landless couples. But, in the main, the three cultural bases of rural morality still stand firm: the home, the temple, and the school. The majority of rural folk believe in seniority, and pay respect and homage to their parents, monks and teachers. The village headman plays an important role as a community leader, in health related matters as well as in social ones.

*Professor and Dean, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand

Health Situation and Problems

Thailand's health situation and problems are similar to those of many developing countries. They are: high infant and child mortality rates; parasitic diseases; communicable diseases; malnutrition; poor sanitary and environmental conditions; illiteracy; and poverty.

Tables 1, 2, and 3 show: vital statistics; the incidence of major non-fatal diseases; and the major causes of death and comparative mortality rates in the population of Thailand.

In general, the population of Thailand is relatively healthy, compared with many developing countries. But a large number do suffer from health

TABLE 1: VITAL STATISTICS OF THE THAI POPULATION BETWEEN 1960-1970[3]

YEARS	BIRTH* RATE	MORTALITY* RATE	MORTALITY RATE (BELOW 1 YEAR)	MATERNAL DEATH RATE**	STILL-BIRTH**	LIFE SPAN	
						MALE	FEMALE
1960	40	12	108	4	3.8	54	59
1965	42	11	66	3	3.5	55	62
1970	37	9.5	49	2	2.9		

*PER THOUSAND **PER THOUSAND LIVE BIRTHS

TABLE 2: MAJOR CAUSES OF ILLNESS OF THE THAI POPULATION (IN-PATIENT)[4]

Types of Illnesses	Rural Hospitals (%)	Hospitals In Bangkok (%)	Total (%)
1. Diseases due to labour, pregnancy (including normal pregnancy)	27.3	78.7	40.5
2. Infectious diseases-Total	31.5	10.5	26.1
a. GI. Infections	12.9	4.0	10.7
b. Respiratory Infections	11.8	4.9	10.0
c. Mosquito-Borne Diseases	5.6	0.7	4.4
d. Other Infections (Hepatitis etc.)	1.1	0.9	1.1
3. Accidents, Poisoning, Violence	13.8	5.4	11.7
4. Non-Infective GI Diseases	4.7	3.5	4.4
5. Psychoneurosis and Personality Defects	3.6	2.7	3.4
6. Diseases of GU System	3.1	2.9	3.1
7. Deficiency Diseases	2.3	0.7	1.9
8. Malignant Neoplasms	1.0	3.5	1.7
9. Diseases of the Heart and Vascular Lesions	1.4	1.9	1.5
10. Skin Diseases	6.1	0.9	1.5

TABLE 3: MAJOR CAUSES OF DEATH AND MORTALITY RATE OF THAI PEOPLE[4]

Major Causes of Death	Mortality/100,000 1967	1970
1. Certain diseases of early infancy and ill-defined diseases under 1 year	36.3	29.5
2. Accident, poisoning and violence	26.2	27.7
3. Tuberculosis (respiratory system)	28.3	21.1
4. Pneumonia	19.6	15.1
5. Heart diseases	16.5	15.6
6. Gastroenteritis and colitis	27.6	15.0
7. Malignant neoplasms	12.9	13.3
8. Malaria	12.9	10.1
9. Diseases of pregnancy, childbirth, puerperium	10.1	7.6
10. Diseases of the stomach and duodenum	5.1	6.9

problems related to a tropical environment and to the stage of the country's economic development. The cumulative pressures of rapid population growth, poor environmental sanitation, and the under-utilization and maldistribution of resources also play a part in this, as do cultural and social factors which affect the perception of health and disease, and the causes of disease.

The main communicable diseases related to the environment are: vector-borne diseases, specifically malaria, dengue and hemorrhagic fever; and water and food-borne diseases, specifically gastro-intestinal infections and parasitic infestations. The latter affect about one third of the whole population annually. Leprosy is still present. Respiratory infections are frequent but usually mild. Deficiency diseases include acute protein calorie malnutrition in infants and children, subclinical malnutrition, mineral deficiencies, avitaminosis and anemia. The incidence of cardiovascular disease, cancer, mental illness and venereal disease has increased in recent years. There has also been a regrettable increase in drug addiction and trauma from crimes of violence and traffic accidents.

Health Services

With this background in mind, let us now consider the health services which are available, and the use which is made of them.

Health facilities, which include provincial and district hospitals, medical and health centres, and midwifery stations, are distributed around the country. Health services are provided by both the private and public sectors. The ratio of private to public average per capita health expenditure is about 3:1.[5] The private sector ordinarily concentrates on the provision of curative and family planning services, which are predominant in Bangkok and in 126 municipalities. Health services of the public sector are concentrated in the provincial rural areas. There has been a rapid growth in the number of private hospitals and of rural health centres; but the available health manpower has not increased to match it.

The provincial health care services were originally designed by the Ministry of Public Health to deal with health needs in the context of a large rural population and a small number of health facilities manned by trained staff. But under present government policy, a district hospital with at least 10 beds and one physician is to be allocated to each rural district outside Bangkok and to each town district. Each tambon (or sub-district) is to be provided with a health centre staffed by one junior sanitarian, one midwife and/or one practical nurse. A midwife station with one midwife is to be allocated to every village with a population of at least 2,000. At the present time, the health service coverage in the rural setting is still inadequate. The health service stations available at the end of 1976 are summarized in Table 4.

TABLE 4: GOVERNMENT HEALTH SERVICE STATIONS IN THAILAND (1976)[4]

Health Stations	No.	Area Covered	(%)	Health Personnel
Provincial hospitals	84	84/73	> 100	34-148
District hospitals & Health Centres	255	255/637	40	15
Sub-District Health Stations	500	500/5,465	9.1	2-3
Village midwifery Stations	1,450	1,450/49,357	2.9	1

The existing rural health facilities are poorly utilized, resulting in only 15.5 per cent of the population using public health services when ill.[1] Extending over the entire country and underlying both the public and private medical care systems is a network of traditional medical practitioners, which is integrated into the traditional Thai cultural patterns and serves, directly or indirectly, about half of the population for its symptomatic health problems (TABLE 5). The reliance on self treatment and traditional practitioners is predominant in rural areas where health services provided by the government may not be available to the people, even if they are prepared to accept them and can afford them. The most important reasons given for this are: dissatisfaction with the services; tradition; poor communications; and remote location.

Health Services Problems

The problems of the health services stem in part from the relatively low status formerly accorded to health in national plans for socio-economic development. This unwelcome trend has now been corrected. The allocation for the Ministry of Public Health under the Fourth National Economic and Development Plan (1977-1981) amounts to 7.9 per cent of the total budget, as compared with only 4.9 per cent under the First National Plan (1961-1966).[1]

TABLE 5: BEHAVIOUR OF THAI PEOPLE IN ACQUIRING TREATMENT[1]

Types of Treatment	Percentage
Buying drugs for self-treatment	51.4
Attending private hospitals and clinics	11.7
Attending provincial and other government hospitals	10.5
Attending district hospitals and health centers	4.4
Visiting traditional medical practitioners	3.9
Visiting injectionists	3.8
Attending TB, VD, and leprosy units, etc.	0.6
No treatment and others	13.7

As already noted, poor coverage has been and still is a problem, as is often the case in developing countries. However, steps have already been taken to deal with this major cause of public dissatisfaction with the health services provided by the Government.

Another problem, again common to many developing countries, is the shortage of trained staff at all levels. This has been aggravated by maldistribution, that is, there are too few doctors in the countryside, and perhaps too many of them in the major centres, particularly Bangkok. The Government has introduced measures to correct this situation also, and I will describe them in a moment. But they have not yet had time to take full effect. Some people think that we should go even further, and train more primary health workers (such as village health communicators, village health volunteers, "granny midwives", and so on), and fewer doctors and nurses. Personally, I agree that many more primary health workers are needed; but I cannot accept that we need fewer trained doctors and nurses. Quite the opposite, in fact. But we need to look more closely at what they are taught. I will revert to this later.

University Curriculum of Health Related Disciplines[7]

So it is now time to turn to the training at present given to future medical practitioners and their fellow workers; and then, in the light of what I have just said and of what I am about to say, to consider whether what these young men and women are being taught is in their own best interests, as well as in those of the Nation. In other words, are we using the appropriate technology in the existing situation?

There are six medical schools in five universities in Thailand. The current medical school curriculum runs for six academic years. It is divided into three periods of two academic years each. The first period is the study of basic sciences courses, customarily in a School of Sciences. The next two periods are covered in a medical school. The courses during the pre-clinical period consist of the basic medical sciences: Anatomy, Physiology, Microbiology, Parasitology, Pharmacology, Pathology, Biochemistry, Introduction

to Medicine and Preventive Medicine. The last two year period is the clinical course and covers all major medical specialties: Surgery, Medicine, Obstetrics and Gynaecology, Paediatrics and minor specialties. A portion of the clinical period is allocated to Community Medicine, in which, in addition to normal lectures, medical students are engaged in field studies in the local health centre, school health programme and so on. Medical students from Chiang Mai University spend two weeks of their clinical clerkship working under supervision in district hospitals and district health centres.

After graduation, each graduate must enter a one year compulsory internship training program before obtaining a medical practice licensure. The training institutions are the university hospitals, centrally located medical service hospitals and large provincial hospitals, all belonging to the Government. Candidates are rotated through major medical services including Surgery, Internal Medicine, Obstetrics and Gynaecology, Paediatrics, etc. Their performance is evaluated by the training institution at the end of the internship before they may be licensed by the Central Medical Council. After completing the internship training programme, most of the new doctors are distributed to health centres and hospitals at District and Sub-District levels for two additional years. Under the present regulations, all medical graduates have to spend three years, including internship, in government hospitals by assignment after graduation before they may choose to leave the service. Some of them may decide to pay a fine to the government instead, so that they can take up the posts of their own choice. Those who are interested in specialty training must complete a two year tenure period of rural service before they are eligible to become a resident at any of the approved training centres in universities or other government institutions.

More recently, changes are taking place in the medical school curriculum to shorten the period of basic sciences education. Khon Kaen and Chiang Mai Universities have already changed their medical school curriculum into one-year basic sciences, two-year pre-clinical and three-year clinical courses. This may be shortly followed by the other institutions. Several programmes have been initiated in order to familiarize medical students with existing rural health problems. The major one is that of Chiang Mai University, in which medical students are engaged in the Rural Health Development Project under the close supervision of the Faculty staff. The health team is organized with the cooperation of students from the Faculties of Dentistry, Pharmacy, Medical Technology and Nursing. They investigate the health problems of a selected rural area and practise the health team approach to solve the existing problems. Other institutions send their medical students to participate in the activities of District Hospitals, District Health Centres or their Integrated Health Care Centres.

There are three Faculties of Pharmacy in Thailand. In general, their curricula consist of two years of basic sciences study, one-half year of pre-professional course, and 2½ years of professional training. Most of the professional years are spent in formal lectures and laboratory training, with a period of clerkship in the hospital pharmacy.

Medical technologists in Thailand graduate from three schools of Medical Technology. A fourth is being established. Their curricula are practically identical and consist of two years of basic sciences study, one-half year of pre-professional and 1½ year of professional courses. About half of the professional years is spent in formal lectures and laboratory practice, and the other half is spent in the hospital laboratory service. The only medical technology students participating in rural health activity come from Chiang Mai University. Under a recently initiated programme, medical technology students are sent to work in the laboratories of the District Hospitals and District Health Centers in Northern Thailand.

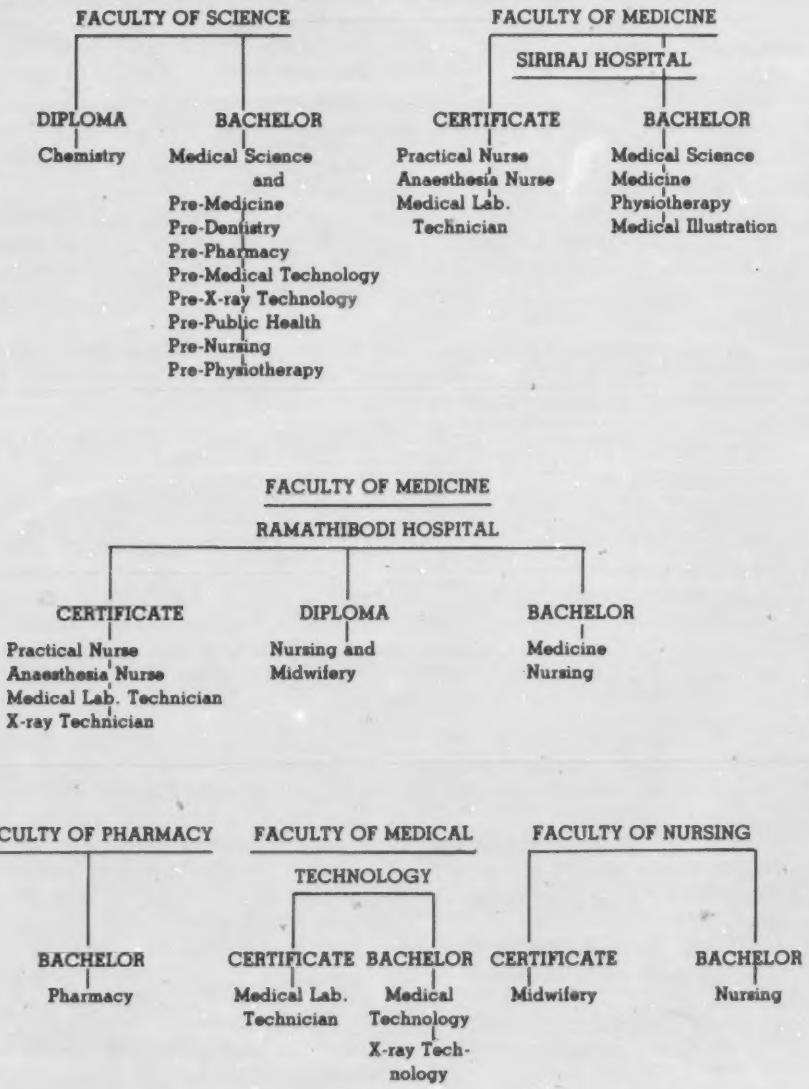
A diploma programme for the training of nurses was offered by every university until a few years ago, when many decided to discontinue it. At present, most Schools of Nursing have only one undergraduate programme, leading to a Bachelor Degree in Nursing. The academic programme consists of three periods: 1½ years of basic sciences study; one-half year of basic medical sciences; and two years of nursing education. Most of the professional training is carried out in the teaching hospitals. The nursing students acquire community health experience through the Social Medicine and Community Health course (school health programme, public health survey, community health programme, etc.).

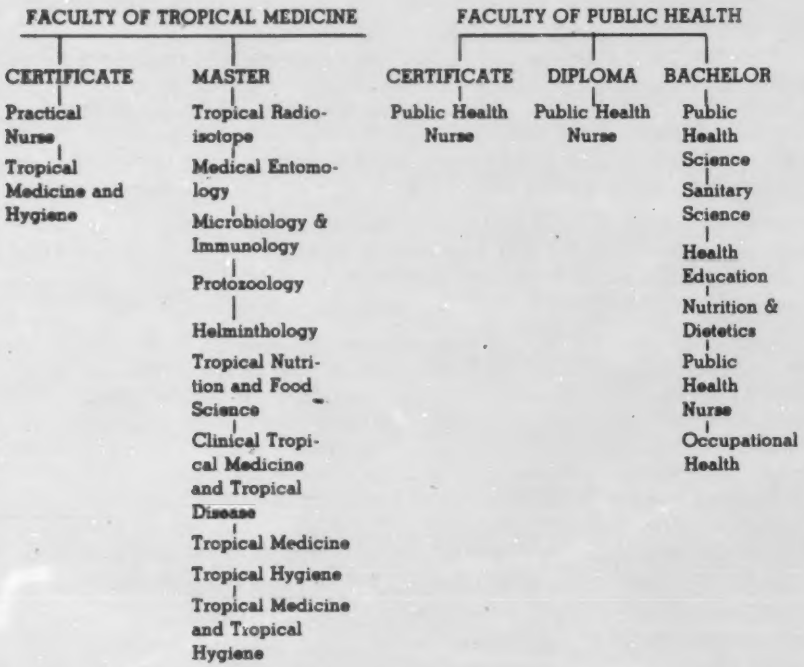
The only School of Public Health in Thailand is that of Mahidol University. Courses of study leading to a Master's Degree in Public Health are available in major areas including Urban Health, Public Health, Hospital Administration, etc. through the Graduate School. Most of the candidates (20-30 per year) are medical officers or physicians from district hospitals and health centres. It is regarded as a part of their re-education programme. Programmes of study leading to a Bachelor Degree in Public Health are also available in several areas, including Sanitary Science, Health Education, Nutrition and Diabetics, and Occupational Health (a total of 60 students). Programmes for a Bachelor Degree (90 students) and Diploma (200 students) are also available in Public Health Nursing.

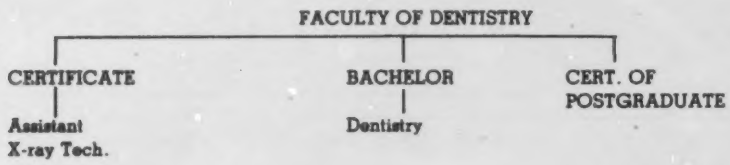
The School of Tropical Medicine is part of Mahidol University. It offers courses of study leading to a Master's Degree in various fields of Tropical Medicine, including Tropical Radioisotope, Medical Entomology, Microbiology and Immunology, Protozoology, Helmilthology, Tropical Nutrition and Food Sciences, Clinical Tropical Medicine and Tropical Diseases, Tropical Hygiene etc. (a total of less than 20 students per year). Almost half of the candidates for the Graduate Diploma in Tropical Medicine (a total of less than 50 per year) are foreign graduates from Australia and other Asian Countries. These programmes are also considered as part of the re-education programme for health personnel.

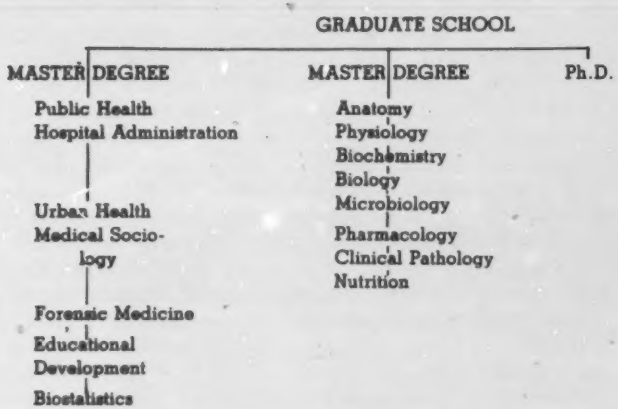
The Graduate School of Mahidol University is one of a few schools offering various programmes of study and research in health related disciplines leading to Master and Doctoral degrees in specific health sciences, including Anatomy, Physiology, Biochemistry, Pharmacology, Microbiology, Pathobiology, Clinical Pathology, Nutrition, etc. (a total of 150 students per year).

TABLE 6: PROGRAMMES OF HEALTH-RELATED DISCIPLINES (MAHIDOL UNIVERSITY)




FACULTY OF TROPICAL MEDICINE
CERTIFICATE
Practical Nurse
Tropical Medicine and Hygiene
MASTER
Tropical Radio-isotope
Medical Entomology
Microbiology & Immunology
Protozoology
Helminthology
Tropical Nutrition and Food Science
Clinical Tropical Medicine and Tropical Disease
Tropical Medicine
Tropical Hygiene
Tropical Medicine and Tropical Hygiene
FACULTY OF PUBLIC HEALTH
CERTIFICATE
Public Health Nurse
DIPLOMA
Public Health Nurse
BACHELOR
Public Health Science
Sanitary Science
Health Education
Nutrition & Dietetics
Public Health Nurse
Occupational Health


FACULTY OF DENTISTRY
CERTIFICATE
Assistant X-ray Tech.
BACHELOR
Dentistry
CERT. OF POSTGRADUATE


GRADUATE SCHOOL
MASTER DEGREE
Public Health
Hospital Administration
Urban Health
Medical Sociology
Forensic Medicine
Educational Development
Biostatistics
MASTER DEGREE
Anatomy
Physiology
Biochemistry
Biology
Microbiology
Pharmacology
Clinical Pathology
Nutrition
Ph.D.

Utilization of Health Manpower

I have tried to show that, for a country at this stage in its development, Thailand possesses an enviably varied range of training facilities for the medical and allied sciences. The quality of those who graduate, and the level of their knowledge, are generally speaking more than adequate. Some, indeed, are outstanding and likely to reach the highest levels — judged by international rather than by purely national standards — of our profession.

But are we making the best possible use of the talent which we possess? I indicated earlier that this might not always be the case. And now I should like, if you will bear with me a while longer, to expand on the point somewhat. I will be as brief as I can.

Even though six universities offer at least 86 different curricula for training health personnel (Table 7), Thailand still suffers from a shortage of the required types and numbers of health personnel needed by the national health services. Although "emigration" has been brought to an end, the problem of maldistribution still exists. The calculated "medical density" of the whole country is one doctor per 8,000 population. But whereas the figure for the Bangkok area is 1/1,000 population, that of the rural area is 1/15,000 population[8]. Approximately 30 per cent of 3,000 pharmacists are in government ministries and 60 per cent are either running private business or working in the pharmaceutical firms, which are mostly located in Bangkok.

Furthermore, it is generally accepted that a key factor in the development of a Health Manpower System is the proper integration and coordination of its three main elements: planning; production; and management (Figure 1). But in practice, the links are sometimes missing and the three elements are apt to develop quite independently and in an uncoordinated way. Regrettably, this happens in many countries, and Thailand has in the past been no exception. We are, however, now alive to this problem, and to others which I shall briefly mention; and we seeking to correct them. Admittedly, we still have some way to go; but at least the first steps have already been taken.

Lack of coordination between the development of health manpower and the development of health services is a frequent failing, and only rarely can one find instances of thoughtful planning for the production of balanced health teams. And when health manpower plans are prepared, they have been known to be based on arbitrary statements such as "we need this number of doctors", without taking account of what the correct number should be. Sometimes the training institutions do not follow the decisions of the planning unit, and by a kind of reflex action step up the number, though experience has shown that this alone does not solve the problem of creating a balanced health service. Furthermore, curricula and teaching methods have not always been entirely suitable for teaching health workers how to meet the real needs of the community as a whole, and especially of those living in rural areas. Among the reasons for this is that the classic medical curriculum is primarily directed towards curative care (i.e., therapy) rather than the prevention of the onset of disease (i.e., prophylaxis). It is therefore to some extent irrelevant to the necessary work of health promotion, prevention of

TABLE 7: UNIVERSITY CURRICULA FOR PRODUCTION OF HEALTH PERSONNEL IN THAILAND[4, 7]

University	Types of Program					
	Diploma	Bachelor	Certificate	Master	Ph.D.	Total
Mahidol	10	16	18	13	5	62
Chulalongkorn	1	7	1	1	—	10
Chiang Mai	1	6	—	—	—	7
Thammasart	1	1	—	1	—	3
Khon Kaen	1	1	—	—	—	2
Kasetsart	—	1	—	1	—	2

disease, and rehabilitation; and consequently, if one is not alert to the possibility, educational programmes tend to develop in isolation from changing health care needs.

Another field in which poor communications and coordination combine to prepare a pitfull is the management of health manpower. The working and living conditions of health workers, particularly in rural areas, are often unattractive. Salaries are low. Further training to improve their levels of competence and performance has not always received the attention it deserves.

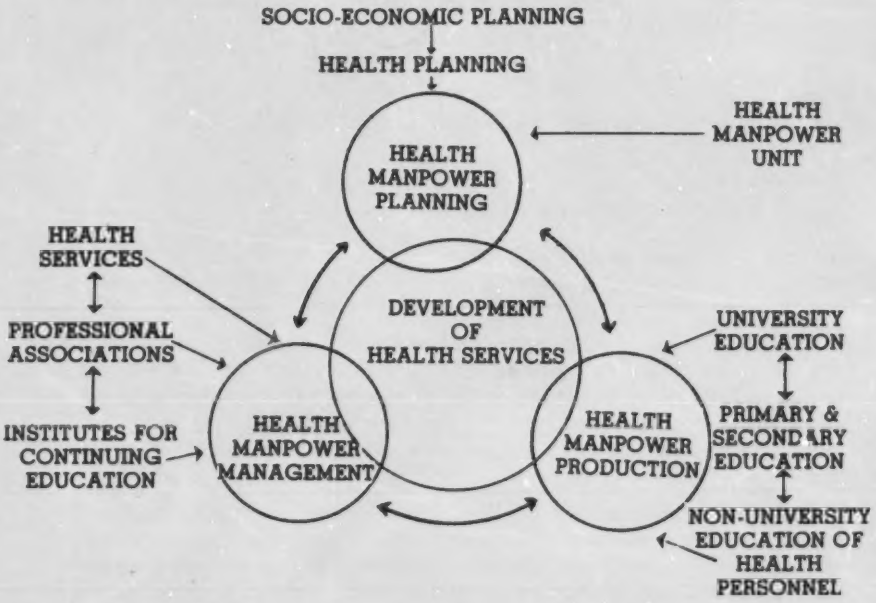
As already mentioned, the Royal Thai Government has already initiated measures to redistribute health care personnel, including trained physicians and surgeons, to rural and marginal areas. The decision that young doctors must complete two years of rural service before they can proceed to speciality training may be regarded as stringent by some. But there can be no argument that it was a necessary one in all the circumstances.

However, we should not delude ourselves that the answer to our health planning is a mere redistribution of existing resources. Some of these resources in fact relate to highly advanced areas of medical technology and therapy which are only marginally relevant to the needs of the majority of the population. Besides redistribution, it seems that we probably must create new resources more closely adapted to the needs of our population.

The Director General of the WHO summed this all up well enough in an article entitled "Tomorrow's Medicine and Tomorrow's Doctors"[10]. He wrote:

> "A thoughtful observer of medical schools will be troubled by the regularity with which the whole educational systems of these schools is isolated from the health service systems of the countries concerned ... Most of the world's medical schools prepare doctors ... to deal with rare cases which are hardly ever encountered, rather than with the common health problems of the community; for cure rather for care. They tend to forget that technical solutions must respond to social goals, not dictate them. Medical practice has become almost synonymous with curative medicine

Figure 1: Institutional Interrelationships in Health Services and Manpower Development (HSMD) and some of the national bodies involved. (Ministries of Health, Social Welfare, Education, Socio-economic Development, Planning, Labor, National Research Institutes, etc. or their equivalents).



and doctors are trained predominantly to look at episodes of diseases, paying little or no heed to the whole man, and to his interaction with society ... But society ... expects us to prepare doctors to fulfill a social purpose in response to the health needs and demands of the community which they are going to serve. The medical school is an integral part of society, an instrument which should prepare for work *in* and *for* society."

Perhaps I have been almost too frank in sharing these thoughts of mine with you today. I have done so in all humility, since it is my duty not only to heal the sick and to try to teach others this merciful skill, but also to help my brethren men to avoid falling into sickness, suffering and distress in the first case. It seems to me to be self-evident that preventive medicine, based on what may appear at first to be over-simplified and elementary public health measures, is the key to health and well-being in developing countries. But to be effective, it must be carried to where it is needed. In the case of Thailand, this must inevitably mean to the rural areas and, in our part of the country, to the hills. And with it must go an effective system for providing such imme-

diate relief as is possible for the sick in the areas in which they live. Remember the country doctor in the old days in Europe, on horse-back with his little bag of instruments and drugs, riding from farm to farm in all weathers, to visit his patients in their homes. The knowledge that he would come when called gave confidence; and the sight of him at the bedside gave the patient the will to recover. He may not have known much medicine, by modern standards. But he filled an urgent social need, and by and large was successful in his calling.

I venture to suggest that this is an example on which we might well ponder. And then ask ourselves: is the training given to our future doctors and their colleagues such as will fit the majority of them for a role such as his? It is a vital one in developing countries today. As I indicated above, we in Thailand have begun to take the first tentative steps in this direction. But perhaps we need to go further — and faster — if the immediate needs of the Thai people are to be met.

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DISCUSSION

The discussants for this session were: Dr. Ismail Saad; Prof. Phoon Wai-On; and Dr. Bachtiar Ginting.

The essence of the discussion is as follows:

Dr. Ismail Saad began by observing that the medical course is somewhat similar in structure in all countries varying from 5-7 years with a one year pre-medical course. He expressed his interest in knowing more about the Consortium of Medical Sciences as it operates in Indonesia.

Referring to Prof. Somasundaram's paper, he says that the curriculum of the Medical Faculty of the University of Malaya and the National University of Malaysia (UKM) is similar and is characterized by "tightness". Such a structure and orientation, he feels produces good doctors but not good 'citizens'.

On Prof. Wong's suggestion that perhaps the Medical Course be shortened, Dr. Ismail asks now this could be done. Would this, he continues, jeopardize the basic requisities of the Medical Course. Continuing his query, Dr. Ismail asks whether it is possible to introduce Medical subjects such as biology during the early school years. Would this not lead to too early specialization? On the suggestion that students should have some part in the structuring of the medical curriculum Dr. Ismail's view is that there are both merits and demerits in the idea.

Turning to the problems of maldistribution of doctors, Dr. Ismail suggests that there are three possible ways to ensure that the peripheral areas of the primary health system adequately developed viz., the use of incentives such as extra allowance; the use of compulsion such as making it mandatory for doctors to serve the government for three years; and the use of persuasion including the teaching of primary health care in the medical course. Co-operation and dialogue between the university and the people who implement the policies of the primary health care system he feels is necessary.

Prof. Phoon in giving his comments first referred to the matter of curriculum evaluation by graduates. His is of the opinion that evaluation must be based on adequate experience. A multi-prong attack needs to be made to ensure that evaluation are completely reliable. He suggests for example, that teachers must evaluate themselves and be evaluated by others. Similarly, the effectiveness of a medical curriculum may be evaluated by personnel at health centres other than those at the University.

He feels that team training is good as opposed to training in isolation. Training should include all relevant levels involving as many areas and inter-connected activities as possible within the purview of medical education and the delivery of primary health care. He does concede, however, that such a mechanism is complex and not easily carried out because of various problems.

He agrees that there is a lot to say for the teaching of human/social biology in schools. The problem as he sees it, however, is getting good

teachers with the requisite background and interest to teach it. If done effectively, it may serve as a first step to the teaching of primary health care.

On the matter of integrating the teaching of primary health care in the curriculum, Prof. Phoon feels that the nature of its content needs clarification. He observes that although Sociology and Anthropology are included (as in the case of the paper presented by the Indonesian colleague) there is a need to know how they are integrated.

Dr. Bachtiar Ginting in referring to his experience states that most graduates in Indonesia work 3-5 years in the rural areas. However, there is under-utilization of their services. A curriculum based on purely epidemiological data may not be anymore reliable, he adds. Instead of structuring the curriculum of the primary health care system on epidemiological data alone, Dr. Ginting suggests the need to enquire into the manner the medical institution is run. For instance, can an institution without experience in primary health care delivery effectively teach it, he asks.

The speakers were then invited by the Chairman to respond to the comments and queries made.

In clarifying a point raised earlier, Dr. Alex Papilaya explains that while there are differences in the duration of the medical course in Indonesia, such differences are confined to the pre-medical and pre-clinical stages which may vary from three to four years. The clinical years are, however, standard viz., three years.

On the question of the implementation of the teaching of primary health care, Dr. Papilaya explains that theoretical knowledge is given by different departments but in the fifth and sixth years of the medical course specialized knowledge is given. In further clarifying the Indonesian situation, Dr. Papilaya explains that the Ministry of Education and Culture allows each institution of higher learning to develop its own community health programmes. There is normally a Committee headed by the Dean who decide on the instructional data or content to be used.

In response to the comment that there is underutilization of community health services in Indonesia, Dr. Papilaya suggests that perhaps with the assistance of social scientists the services could be better utilized and also made relevant.

Prof. Kylasa Somasundaram in responding began with a clarification. He agrees with Dr. Ismail that the medical curriculum of the University of Malaya and that of the National University share basic similarities. On the comment that university medical curriculum being out-dated, he feels that this is a common complaint of all Medical School students particularly among those in the first and second years when they have to undergo pre-medical courses. Students in the fourth year of study have electives. The problem here is usually the inability of students to utilize this arrangement correctly.

On the maldistribution of doctors, Prof. Kylasa is of the view that doctors are generally able to function well in the rural areas. He stresses, however,

the difficulty of controlling the movement of doctors. There are financial and other attractions which draw doctors away from rural areas.

Referring to the point on the need for evaluation raised earlier by Prof. Phoon, Prof. Kylasa is of the view that students generally are unable to see the overall intention of the curriculum. It is therefore necessary to allow for adequate time to pass before their views may be sought regarding the relevance of the courses being taught. Effective feed-back on teaching methods may also help to improve curriculum development.

On the efficacy of team teaching, Prof. Kylasa's view is that it is effective during the undergraduate period but not after that. This is because the self-concept of doctors is different and hence makes it difficult to undertake team teaching. The proposal in Kuala Lumpur to establish a Department of General Practice, he suggests, may help to extend the scope of undergraduate training vis-a-vis basic health needs.

Prof. Wong Poi Kwong, in his response to Dr. Ismail's query about the possibility of shortening the medical course explains that much of the increase in course work is imposed by departments in the Medical Faculty who each wishes to give special emphasis to its disciplinary orientations. He further explains that the Medical course is about the longest and medical graduates start to earn the last. While there are good reasons to teach the latest in medical practice, yet there is a need to have some perspective.

On the question whether students should be made to learn basic science and medical related subjects early, Prof. Wong feels that the more important concern should be the teaching of scientific principles in the early school years to enable students to develop ideas and relationships rather than the mere acquisition of details and facts. The emphasis he believes, should be to bring science to them in a large way rather than to make scientists of them all.

In answering the query about students being allowed to have some participation in curriculum development, Prof. Wong feels that students can be trained to think effectively and sensibly to enable them to make useful suggestions. In elaborating, Prof. Wong explains that engaging students in curriculum development may encourage greater commitment on their part to their studies.

Prof. Avudh in his response to the query on the length of years in the Medical training course explained that in Chiang Mai University there is now a re-arranging of the clinical part of the course making it a three year course. This is done with a view to familiarize students with the importance of basic health. Though many are against this change, he perceives several advantages in it. The training period will be shortened and there is likely to be a reduction in costs. He feels the attitudes of Faculty members are the most difficult to change.

On the problem of maldistribution of doctors, Prof. Avudh explains that the University is attempting very hard to encourage graduates to serve in the rural areas. To be effective, he feels, the effort must be a collective one in

which everyone cooperates. He concludes by saying that there is yet to be a fully satisfactory method to solve the problem.

Prof. Kawee in clarifying the position at Khon Kaen University explained that the curriculum could be reduced from six to five years if all other medical faculties did the same. In reference to the need to have medical students serve in the rural areas, Prof. Kawee explained that Khon Kaen University requires them to serve at least three years. In a lighter vein, Prof. Kawee adds further that many students do marry local girls and thus choose to remain in the rural areas.

PART V

TOWARDS THE DEVELOPMENT OF BASIC HEALTH NEEDS-ORIENTED CURRICULUM AND PROGRAMMES

TOWARDS THE DEVELOPMENT OF BASIC HEALTH NEEDS-ORIENTED CURRICULUM: A COMPETENCY-BASED MEDICAL CURRICULUM: AN EXEMPLARY MODEL

Tongchan Hongladarom*

The Problems

The overall health problems in most countries is that the health system fails to achieve the total population coverage. In Thailand only 20 per cent of the total population have had access to health care provided by the Government while one portion of the remaining 80 per cent have to seek their own care from self-medication, traditional medicine and private provider and the other portion have no access to health care at all.

The abovementioned situation is due to many factors, including increasing number of population and the low priority given to health, as manifested in the budgets of the countries concerned. While these may be the major constraints, the onus of making the health system work for the benefit of the population as a whole lies directly within the health system itself.

Due to lack of proper health planning, the components of the many health systems function in isolation from each other. The result is that the approach to resolving the health problems is grossly fragmented leading to wasteful overlapping of policies, plan and activities of health care.

There are two major components within the health system, i.e. the health care delivery component and the health manpower component. In most countries, health workers are so scarce that effective health care cannot be carried out. This undesirable effect is getting worse when compounded by the fact that even those health workers available are not utilized in an efficient manner.

The cause of the defect is that there often exists discrepancy between curricula for training health workers and the functional requirements of the real practice in the community. This brings into focus the urgent need to define the roles and functions to be performed by each category of the health workers which could be transformed subsequently into objectives of the curricula or educational programmes. This effort calls for the close co-ordination of the two major components. Unfortunately, such co-ordination is lacking in most countries, resulting in the fragmented approach mentioned earlier.

The Primary Health Care

Recently the World Health Organization has strongly urged the member nations to commit to the idea "Health for all by year 2000" and has intro-

*Professor and Head, Unit of Medical Education, Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand.

duced a health care system namely "Primary Health Care" (PHC) to be used as an instrument for achieving the target.[1]

The PHC is essential health care made universally accessible to individuals and families in the community and is reasonably cheap. Such a system will be of a kind that countries can afford, provided that people themselves participate actively in it. The details of the PHC are found in the background paper distributed by the Seminar Organizer.

From 6-12 September 1978, a major UN Conference was held in Alma Ata, capital of the Kazakh, Soviet Socialist Republic. Jointly sponsored by WHO and UNICEF, and with the support of the Soviet Union, the Conference deliberated all aspects of the approach to PHC and issued Declaration and Recommendations. Among those 22 Recommendations, there are two which related closely to the roles and training of health manpower for primary health care:-

Recommendation 9

Roles and Categories of Health and Health-related Manpower for PHC

The Conference,

Recognizing that the development of primary health care depends on the attitudes and capabilities of all health workers and also on a health system that is designed to support and complement the frontline workers:

RECOMMENDS that governments give high priority to the full utilization of human resources by defining the technical role, supportive skills and attitudes required to each category of health worker according to the functions that need to be carried out to ensure effective primary health care; and by developing teams composed of community health workers, other developmental workers, intermediate personnel, nurses, physicians, and, where applicable, traditional practitioners and traditional birth attendants.

Recommendation 10

Training of Health and Health-related Manpower for PHC

The Conference,

Recognizing the need for sufficient numbers of trained personnel for the support and delivery of PHC,

RECOMMENDS that governments undertake reorientation and training for all levels of existing personnel and revised programmes for training of new community health personnel; that all training should ensure that health workers, especially physicians and nurses, are socially and technically trained and motivated to serve the community; that all training should include field activities; that physicians and other professional health workers should be urged to work in underserved areas early in their career; and that due attention should be paid to continuing education, supportive supervision, preparation of teachers of health workers, and health training for workers from other sectors.[2]

The Recommendations demonstrate clearly the wish to co-ordinate closely the health care and the health manpower development. It is suggested that simple functions of PHC be carried out by a frontline health worker who will be trained in mass and in short duration, and his actions will be at the first level of contact between individuals and health care system. Health workers of all categories should work closely together as a team in order to carry out PHC functions efficiently for the total benefit of the people.

Roles of a Physician in PHC

As an exemplary model for health workers curriculum development, this paper will illustrate the roles of a physician who will be capable and willing to work in such a health care system of which PHC is the hub. These roles may be translated subsequently into curriculum objectives.

The Recommendations of the UN Conference have demonstrated several characteristics of a physician who is able to work comfortably in the PHC. To sum up, it is expected that:-

1. The physician has to apply their technical skills to solve health problems determined in the light of social needs.
2. The physician has to guide, teach and supervise community health workers, including frontline workers.
3. The physician has to educate communities in all matters pertaining to their health.
4. The physician is leader and manager of the health team which consisted of all community health workers.
5. The physician has to plan community health system efficiently and effectively to be used as a mechanism to solve health problems of the community.

The responsibilities of a physician are increased, since he is given social, managerial and educational functions in addition to his technical functions, and if he accepts this challenge he can become leader in health.

Curriculum Objectives

Using the roles of a physician as guidelines, the curriculum objectives can be stated as follows:-

After graduation from the medical school, the physician should be able to:-

1. communicate efficiently with colleagues and community people.
2. establish a good human relationship with patients and community people.
3. plan community health care delivery system to solve community health problems by using all health data and statistics.
4. educate community people on all matters pertaining to health.

5. train or supervise community health workers.
6. perform managerial functions of a health post or a community hospital.
7. possess sufficient and efficient technical knowledges and skills in medical care, prevention of diseases, health promotion and rehabilitation, to deal with common health problems of individual, family and community.
8. pursue advancement of knowledge and skills pertaining to health and keep himself up-to-date.
9. be a good citizen and conceive high values of medical ethics and responsibilities.

Curriculum Content

Subject matters of a curriculum are selected on basis that they are significant and relevant to the curriculum objectives. The main elements of such a curriculum should include the following:

1. the knowledge of how environment, social and economic conditions affect health status of individual, family and community.
2. the study of learning theory and educational psychology, since the physician has to teach, guide and supervise people and his health team.
3. the study of group dynamics, interpersonal and intrapersonal communications, so that he is able to communicate with people well and is sensitive to feelings of the others.
4. medical knowledge and skills sufficient to solve common health problems, i.e. to perform diagnosis, treatment, and prevention of common diseases or conditions and to restore health of the individual, family and community.
5. the study of management sciences and organizational psychology, since the physician's functions are to deal with behaviours of people and the motivation of people; to solve conflicts which may arise from his health team members; to deal with administration of his health team and his office.

Curriculum Methods and Evaluation

To provide learning activities for students to accomplish those competencies described above, the competency-based curriculum should be introduced with the technology of mastery learning. The broadly defined competency objectives should be broken down into smaller, cumulative steps through which students may work at individual rates using many learning resources such as books, laboratory experience, teachers ... etc., according to their own needs and rate of progress. Student entering level of competency with respect to objectives should be assessed before entry into the programme; and the student achievement should be assessed at each learning

stage in order to record and feedback the rate of progress to students and provide valuable feedback to teachers on the quality of instruction.

Some students will likely not have demonstrated at least some of those competencies required. The teacher has the responsibility at this point to provide a remedial programme that will facilitate the task of enabling those students to demonstrate successfully the requisite competencies.

A final assessment or summative evaluation should not be frequently used. The primary purpose of summative evaluation is to grade students according to their achievement of the course aims. The nature of evaluation in such a curriculum strongly suggests the need for pass/fail with no credit scheme, because the student either demonstrates the skill satisfactorily at the minimal level of competency or does not do so. Imposing a gradation of A, B, C, D and so on forces distinctions that are inappropriate in this kind of curriculum.

The instruction methods suitable for a programme such as this must emphasize on individualized learning and independent project. Small group discussions, role-playing and simulation techniques are methods of choice. Learning resource centre where teaching materials and audio-visual aids are kept and are easily accessible to students must be established.

If it is decided that the physician should possess favourable attitudes toward rural areas, the curriculum should provide opportunity for students to study in the rural setting and face rural health problems early in their career.

Selection of Students

Students suitable for this type of curriculum should be selected from those living in the rural areas. In that case the attitude of willingness to live and work in the rural areas should be required. Those to be admitted into the programme should pass an attitudinal test. A period of apprenticeship as a hospital assistant should be provided, during which time students would be carefully observed and their behaviours are judged.

Curricular Changes

Those who endorse the philosophy and purposes of the competency-based curriculum must also recognize that implementation will alter the usual modes of institutional operation. Educational activities and time schedules may all have to change, but the most significant modification will be those of faculty and student attitudes and activities, which must shift in a manner that emphasizes learning rather than teaching.

Students must accept a willingness to join with teachers in thoughtful discussion about learning objectives and instructional strategies. The other important change will require students to accept the personal responsibility for learning that is a central component of the curriculum system.

Teachers in this curriculum must change their attitudes and practices. They should be able to plan their own instruction, define competencies to which the instruction must be directed. The next is to plan instruction units

that must build systematically and sequentially toward those goals. They require of the knowledge of educational psychology and technology so as to be able to select appropriate teaching methods and materials. They must demonstrate genuine concern in helping students to assess their own progress toward defined competency objectives.

These new roles are not easy for teachers to adopt when they have themselves been educated in a more conventional way and have developed a style of teaching that is comfortable, as well as consistent with a personal perception of professional responsibility. The mechanism for bringing such teachers to the point of accepting new roles is manifolds and requires expertise in management sciences and perseverance of the school administrators or the curriculum planners. The action for change must be carefully designed and built-in into the curriculum plan. The followings are procedures for change, the institute should see to it that they are not neglected:

1. Training or Re-training teachers on educational technology and its new developments.
2. Doing research in education, especially on curriculum development, the results of which will be utilized by the planners in making decisions and be used as an instrument to convince the faculty staff on the value of the curriculum change.
3. Disseminating all information concerning the developmental process of the curriculum to all faculty staff.

These three procedures may constitute the best mechanism applicable to induce attitudinal changes of the teachers and students.

The responsibility for producing the curriculum change lies squarely on the shoulder of medical school leaders. They themselves may not carry out work, but without their encouragement and support it will never be done. To direct the change toward the desirable goal, the curriculum leader should consider first at the reward system. If a staff member is recognised for contributions to patient care or research productivity, then these works are likely to claim the greatest attention. Since creative work in medical education is the function least likely to bring academic recognition or reward, changing this order of things will be difficult.

If an institution demonstrates willingness to respond to the innovation, the national policy-makers must give it full financial and high morale support and if the institutional policy-makers reward departments and individual teachers who work toward bringing about the necessary programme changes, it can be assured that the changing process will be started and proceeded on.

The task of bringing about curricular change such as this is almost impossible but the obstacles are not unsurmountable. The greatest impediments are found in the heart of the faculty staff concerned not in the resource limitation. It is hoped that the acceptance of the faculty staff would bring about a better match between health service development and health manpower development which, in turn, would bring about the happiness of the nation.

SUMMARY

The major cause of health problems in most countries has been identified that the health system fails to achieve the total population coverage. There exists presently the miss-match between the health care system and the health manpower system. To remedy these difficult problems, WHO is introducing "Primary Health Care" concept to its nation members and has recommended, the closely co-ordination between the health service system and the health manpower development system.

In this paper, an exemplary model of a medical curriculum has been structured by first trying to define roles and functions of a physician who will be able to live and work comfortably in a health service system of which PHC is the hub. Then, competency-based curriculum with mastery learning technology is described in order to demonstrate the relevancy between the learning activities and the defined competency objectives.

Lastly, the process of changes has been described. It is decided to launch such a programme in a medical school.

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PREPARING THE PHYSICIAN TO SERVE THE PEOPLE

M.K. Rajakumar*

Recent decades have seen mounting dissatisfaction with and even disaffection towards the medical profession. Ironically these have been the years of most dramatic developments in medical technology. Whilst there has been a steady scientific input over the past two centuries into our understanding of the human organism and of disease processes, the output in terms of improved methods of therapy have been poor until the last half century. Over the past 20 years, advances have been even more spectacular and we are poised on the threshold of breakthroughs that will have a major impact on the hard core of disease that has been resistant to medical science. There can be no doubt that much has been achieved and much more is coming.

Yet the outcry continues. A great deal of the improvements in mortality and morbidity rates is attributed to economic advances reflected in improved nutrition and housing, good water supply and sewerage disposal. The image of the physician as learned and retiring has been replaced by that of aloof and arrogant. Partly it is the democratic temper of our age that resents the elitist presumptions of the doctor. Partly it has been the recoil of disappointment from unfulfilled expectations. Medicine has promised much that it has failed to deliver.

> "Health is a state of complete physical, mental and social well-being and not merely the absence of disease."
>
> World Health Organisation[1]

The operational impracticability of this definition need not detract from the grandeur of its vision or the nobility of its purpose. However, we must retain our sense of proportion. Two-thirds of the world live in poverty and death from starvation is still a reality. The medical profession has in fact set itself objectives unachievable by the profession alone, requiring a refashioning of our societies that is beyond the competence of medical science or even the intentions of its practitioners.

> "Health is politics and politics is health on a large scale...
> The physicians are the natural attorneys of the poor...
>
> Rudolf Virchow[2]

Virchow's observation emphasizes that the solutions of many of the health problems that confront us require our endeavours not only as physicians but as citizens.

If it is true to say that medicine has promised too much, it is also true that it has delivered less that it could. In the present state of medical knowledge there is a tremendous amount that can be done by the conscientious application of medical science. The profession has instead retreated into the mental-

*Chairman, Committee on the Future of the Health Services, Malaysian Medical Association (MMA), Chairman of Council, College of General Practitioners, Malaysia, and President-elect, Malaysian Medical Association (MMA).

ity of a trade guild, preoccupied with status and rewards, defensive even in the face of absurd criticism, resentful of reminders of its responsibilities and insecure in the face of its inability to deal with the ills of modern society. The engineering approach to medicine has had spectacular success in the management of advanced organic disease in a hospital but has failed in the maintainence of health and the prevention of diseases.

That remarkable person, Dr. H. Mahler, the Director General of the WHO, has made this trenchant comment:

> "The general picture shows an incredibly expensive medical industry engaged, not in the promotion of health but in the unlimited application of disease technology to a small proportion of potential beneficiaries and, perhaps, not doing that too well either. Since there is a vast professional establishment concentrating on the complicated problems of the few, it follows that professional education and training are geared to the same problems. So the distortion of health work is self-perpetuating. The whole unhealthy system finds its most grandiose expression in buildings, in the disease palaces with their ever-growing staff needs and material sophistication. In medical research, the main thrust also serves the pursuits of the disease-oriented establishment. Accelerating these distortions of health is the profit motivation of the vast multi-billion industrial empire of capital-intensive diagnostic and therapeutic products".[3]

The medical school has served as the lightning rod for much of the criticism against the medical profession. Two principal complaints have been made against the medical school. Firstly, the medical curriculum is said to be largely irrelevant to the health needs of the community with too high academic standards. The second criticism, is that its graduate fail to fulfil their obligation to society, instead seek high incomes in urban practices. These accusations need to be seriously examined.

The criticism of the curriculum of medical school appears to me to be misplaced. The undergraduate medical curriculum is a basic course towards training the physician for practice. The basic medical sciences — anatomy, physiology, biochemistry, pharmacology and the principles of pathology — do not vary substantially between the races of mankind. Much of clinical training consists of basic techniques of clinical examination, interpretation of investigations and the diagnostic process. These fundamentals comprise the main body of medical skills and have to be first acquired by the undergraduate and then applied to the particular medical problems prevalent in any community. Medical teachers that I have met were invariably aware of this and are constantly seeking to make the course relevant to practice. In any event the clinical material available for the students determines this. There is also a growing awareness of the importance of social medicine but if you overload the medical curriculum with social medicine you do not change social reality, you only produce clinically incompetent physicians.[4] This is not to say that I am entirely satisfied because there are still more innovations I should like to see. What I protest is the great volume of unthinking criticism that threatens the fundamental scientific character of medical education.

Medical schools have to produce graduates of a higher scientific level than before. In many developing countries, so-called physicians are trained

to educational levels no better than a para-medic and their medical degree is a caste mark more than a qualification. If the physician is to justify even part of the rewards in status and money that society gives, then a rigorous period of training and the acquisition of genuine skills must be demanded.

I insist on high standards of education so that the medical graduate can manage the difficult medical problems of rural health care. You do not need a medical school education to treat the trivial conditions on which great numbers of physicians spend most of their time. I am hinting now at a role for the physician that I shall elaborate later.

The second criticism is of the lack of social commitment of the graduates of medical schools. This is true of the majority of the members of all the professions in our countries but the expectations towards the physician is higher and the disappointment therefore more marked. In our culture the physician is expected to possess a combination of scholarly and saintly qualities. In practice, recruitment to medical school, as for other professions, come disproportionately from the children of wealthy families, westernised culturally with elitist career aspirations and oriented to saleable skills for private speciality practice. Medical education is a channel for upward social mobility. Family wealth and a professional qualification is an unbeatable combination. The gross inequalities of wealth and income and developing countries are sustained by tight controls in society. Egalitariantism and democracy are subversive to their social order. Attitudes and institutions retain the colonial imprint even after political independence.[5,6] The professions contain too many who cultivate the tastes of aristocrats with the ethics of shopkeepers. The professions thereby constitute a citadel of reaction and the vehemence of their reaction to a challenge to their economics interests should not be underestimated.[7]

We need to find clever young people from a wider social background who are oriented to community service and are socially motivated. Henry Sigerist (1946) with his great vision had already called for graduates who consider medicine to be "not competitive business but a service", who will serve most of all the low-income groups who need their services most, who will be trained in teamwork and a spirit of cooperation to prepare them for group practice organized around a health centre; who will practise preventive medicine, and who will become interested in health, not only in disease.

> "We still need, more than ever, a scientific physician, well-trained in laboratory and clinic. But we need more! We need a social physician who, conscious of developments, conscious of the social functions of medicine, considers himself in the service of society. There is no point in training doctors primarily for city practice among the upper middle class".[8]

The failure of the medical profession to meet the needs of the vast majority of the people is undeniable. I have argued that it is related to the class composition of the professions and the distribution of rewards in our society. To change this will be a long and painful process. Medical teachers must take advantage of the idealism of the young and their eagerness to rise to a challenge. This is my principal criticism of the medical school that it has neglected to maintain a fierce criticism of the unhealthy state of our society and to nurture in its students a spirit of courageous social commitment.

The alternative to reform is a reaction of frustration that seeks to establish health without the medical profession and if possible without medical science. The recent declarations of the WHO on Primary Health Care 9 contain this bizzare element. A proposal dignified by the WHO that states the health plans can be implemented without physicians serves many dubious interests. It will be welcomed by the politician who wants the appearances of a solution, by the medical administrator who finds his clinical colleagues to be less amenable to following instructions, by the hospital establishment who are reluctant to release doctors from the hospitals and by national elite who want their doctors, their own children, in urban centres for their own care.

The other element in this new thinking is that traditional medicine should be used to a greater degree. Modern medicine has acquired its scientific basis by painful experience. The awful case histories of treatment of the past can become a medical reality today in a newer version if we allow our critical standards to be lowered.

Traditional medicines were part of our original Pharmacopoeia and we still retain the refined end products of opium, digitalis and ephedra. There is still too much of untested medications and unproven procedures in medical practice. The remedies that passed as medical science only 50 years ago look ridiculous now and already we look back with embarrassment at radical mastectomy and Southey's tubes. To go back now to the use of traditional medicine whose composition and activity is unknown is a reversion to quackery. Intellectually it would poison the wells of our discipline.

The third element is that of community participation whereby the community is involved in assessing the situation, the definition of problems and the setting of priorities. This is of course a wonderful prescription and would represent an advance of revolutionary proportions. In practice, community participation may become another channel for the rural elite to obtain more than their fair share of whatever is being distributed.

Having said all this, where do we go from here. I have a somewhat different definition to Primary Health Care from that publicised by the World Health Organisation. The WHO definition seems to advocate an inferior grade of health care as adequate for rural people. I shall not argue the importance of primary care here.[10] I start with the premise that our people, and specifically I have in mind the rural areas where the majority live, need modern medicine and well-trained physicians and we must begin with the assumption that these must be made available to them. The rural community has to be objectively studied and priorities worked out.

The rural areas of the developing world have high death rates and infant mortality, large numbers of acute illnesses and many neglected cases. The environment sustains disease. The people are educationally backward. An important feature is the depression of cultural levels by the migration of its educated people to the city.

Under these circumstances, relatively modest investments to prevent disease can bring substantial returns in health. Ideally, other trained personnel, with training backgrounds in agriculture, economics and sociology and

possessing special skills, should join the medical team in rural centres; this will raise the morale of the countryside, contribute to its cultural life and strengthen its position in the battle for a greater share of national funds.

The lack of money is the first of two objections on any proposals to bring modern medicine to the rural areas. The second is the difficulty of getting staff, particularly physicians, to live and work there.

Money is one thing we will never have enough. The question is one of priorities. How high are the priorities for rural health? The truth is that neglect of the rural population is a consequence of the urban-based political power structure of developing countries. Government expenditure for the recreational costs of the ruling elite and the so-called health bills incurred by them in the developed countries, would be sufficient to pay for the running costs of several fine community health centres. To establish high priority for rural health should be the common struggle of concerned people in the universities, the medical profession, the Ministry of Health and other concerned intellectuals.

The difficulty of getting physicians and other trained staff to go to rural centres cannot be underestimated. The rewards are all in the cities and the young graduate going into the countryside may find himself overlooked for advancement and considered a bit of a fool even by those officials who urged him on.

If young doctors are to be persuaded to go into rural areas they must be prepared psychologically from their undergraduate days. At University they need role models of primary physicians that they can admire and emulate. They must see these models amongst their teachers as well as in Community Health Centres when they are posted there. Secondly, the rural health centre must provide work satisfaction. Nothing is so frustrating as to suffer under the dead hand of a bureaucracy that is unresponsive to the needs of the physician in the field. The undergraduate must see a happy, successful team in operation at exciting and interesting work if he is to be attracted to join them. Thirdly he must have an expectation of a career. If he goes to a Community Health Centre, he must be assured that he can make a career of it and not be faced with the prospect of returning to the cities to start again at the bottom of the hospital speciality ladder. Lastly there must be rewards, in salary, in promotions and in praise and recognition. None of these considerations now exist for doctors in rural health centres in the developing world and this by itself is a damning proof of the lack of sincerity of these ruling elite when they pay lip tribute to rural health.

Having found the doctors, we do not rush them out into the rural areas. The doctor in the rural area must be better trained than one in a hospital. The undergraduate course gives him the essentials and he now needs to acquire the skills of clinical examination and experience in recognizing and treating common conditions in a variety of specialities. Fortunately the young doctor on training is not a subsidised creature, he earns more than his keep, putting forth more than a day's work at most times. So these training opportunities should not be grudged to him.

After this basic clinical training, he is posted to selected community health centres where he continues to be trained in the speciality of primary care. These selected community health centres are the key to the rural health programme.

We need model centres to gain experience in this still new field of delivering primary health care to the rural areas. My own country, Malaysia, has an excellent chain of rural health centres on which we could build. The model centre should have the same priorities customarily given to teaching hospitals. Each Centre with its peripheral clinics will be responsible for the health of a specified area and population. In some countries, you may start with 100,000 population, in others 20,000. The Centres should have a staff of 5 physicians, 3 under training and two senior physicians, one with a University teaching background and one with primary care experience from the Ministry of Health. This team will look after the main centre and visit peripheral clinics. After two years of experience here, the trainee doctors can be considered specialists in the area of primary health care. They can now be posted to lead teams in new centres.

You will note that I do not scatter physicians thinly on the ground for effect. This is because standards of work are highest with doctors in groups, allowing for mutual audit and education, and morale is higher. The other feature is that the physician are part of a team, an integrated primary health care team.

The responsibilities of the team is for the total health care of the entire area, combining therapeutic and preventive activity. Traditionally the physician has concerned himself with the care of the patient presenting himself for treatment at the clinic. At the Community Health Centre, the philosophy is one of complete responsibility for health by an integrated team. Sigerist again has already envisoned this:

> "The training of auxiliary medical personnel (clinical nurses, public health nurses, mid-wives, medical social workers, laboratory technicians, etc.) is just as important as the training of physicians and needs just as much reorganization along new lines. The School should foresee a special division for the training of such personnel, closely integrated with the curriculum of the medical student. Students of medicine must learn from the very beginning the work in teams with the auxiliary personnel".[8]

The Physician can no longer work efficiently on his own but needs a team. The nurses and para-medics on this team will share the responsibility of diagnosis and treatment, with the confidence that a physician stands behind them. Experience all over the world has shown that para-medic staff can deliver health care of a high quality with patient satisfaction when they are members of a team under the leadership of a physician. The physicians in primary care must learn to work as a member of a team. At university he must be prepared for the role and at the community health centre he will learn how the team functions. The Community Health Centre is a learning centre for the entire team.

This is an important point. Most illnesses are self-limiting and many patients presents with trivial complaints. It is no achievement to have expen-

sively trained physician screen patients by the hundreds a day; nor is it any better to have inexperienced doctors in rural centres.[12] You need the experienced doctor and a good team working in an integrated fashion in a modern centre.

You need well-staffed and well-equipped centres. The centre must be attractive to patient and staff alike. Medical staff get job satisfaction from the knowledge that they can do a great deal for their patients because they have the necessary equipment. With ingenuity the cost of equipment can be reduced to a small fraction of the cost in a rich country. Drug bills are always a case of anxiety. If marketing irrationalities[13] are avoided and prescription sense observed,[14] then the cost can also be a tiny fraction of that in a developed country.

A corollary to these proposals is the establishment of national Institutes of Primary Care. The Institute would serve as a resource base for the Primary Care Health Centres, provide library and journal services, help to develop medical record systems, identify the ideal level of treatment at a Centre and the appropriate equipment and staff skills, and generally summarise the experience of the project.

The concepts that I have outlined imply a change in the planning assumptions of the countries of the developing world. It necessitates the replacement of the pyramid model of planning with the rural clinic at the base and the urban hospital at a stratospheric apex. Instead I recommend the wheel as the model with the community health centre delivering primary health care as the hub, the central axis of the health system, with specialised institutions having the supporting role. Secondly, I describe an integrated primary health team, in which physician, nurse, and others jointly assume responsibility for health care of a defined area and population. Thirdly, I seek to place the responsibility on the universities for the attitudes of the undergraduates and involve them further in training at the Community Health Centre. Fourthly, I insist on sending only well-trained doctors to rural areas and to continue their training at the community health centre. I oppose the solitary posting of young doctors and urge the formation of teaching centres with senior doctors available to guide them. Finally I insist on job satisfaction for those who work in community centres and the assurance of excellent career prospects.

Great journey too must begin with a single step. The present inequities in health are incompatible with civilization. The profession of healing is a noble one and we must call up the fullest of our spiritual and physical resources to create new institutions and processes that can ensure health for all our people.

Note: The views expressed in this paper are those of the writer's and not those of the organisations with which he is associated.

SUMMARY

Advances in medical science have not benefitted vast numbers of people in developing countries. The medical school has come under criticism for the

irrelevance of its curriculum and the lack of social commitment of its graduates. The basic scientific character of the medical curriculum must be preserved and standards maintained. The lack of social commitment is related to the social background of entrants. The medical school has also failed to cultivate the idealism of these young people. We need to train physicians to work in teams with other medical personnel in community health centres. Young physicians must have training before being sent to the centres where they will specialise in primary care. These posts must be satisfying and rewarding if staff are to be attracted to serve in them. Any form of primary health care that does not involve physicians and uses traditional medicine is undesirable. The medical profession has a responsibility to find a way to bring modern medicine to the people of the developing world.

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THE DEVELOPMENT OF NEED-BASED TRAINING PROGRAMMES FOR HEALTH PERSONNEL

Muangtong Khemmani*

Introduction

According to one of the concepts in Buddhism, the "Four Factors" which are the basic human needs consist of Food, Clothing, Housing and Medicine. This has been known since 543 B.C. which is again most cited in this century as "Physiological Need" according to Maslow.

Although the concept of basic human needs has been known for so long, the action in taking it as an approach to development has always been inadequate especially the health needs. Only until recently in this decade that there appears to be an increasing interest in basic needs approach to development in various fields including health as demonstrated by the goal setting of WHO to provide "Health for All" by the year 2000. The means to reach this goal has now become a popular saying within this past few years as "Primary Health Care".

Whether this goal could be achieved or not it is yet to be seen because until now even basic health needs for the majority of people have never been met especially in the developing countries. Several causes can be claimed to create this problem including the training of health personnel which has been until now mostly "Western-oriented" and "Subject-oriented" especially according to the needs of the teachers rather than the health needs of the people. If this situation is not rectified immediately, "Health for All" which was never achieved in the past, is still lacking at present will certainly continue to be a hopeless goal to attain in the future.

Some Concepts of Need-based Training Programmes for Health Personnels

In the development of "Need-based" training programmes for health personnels some concepts must be considered to ensure effectiveness, i.e.

1. "Real needs" must be taken into consideration rather than "Felt needs".
2. The basic health needs of the people must be based on the existing health problems of the country.
3. The "Need-based" training programmes must be primarily based on the health needs of the people with consideration of the "Real Needs" of all parties concerned in addition while taking precautions to prevent the natural bias towards "Felt Needs".

In order to keep the development of the training programmes as "Need-based" as possible; analysis of the programme should be done continuously by using the guideline given as an example (Exhibition 1). The series of

*Associate Professor and Vice-Rector, Chulalongkorn University, Bangkok, Thailand

questions as appeared in the guideline will serve in identifying the needs and directing the development of the training programme towards the identified needs. The whole process can be conceived according to the model as shown (Exhibition 2).

Experience of Actual Application

In order to exemplify the "Need-based Approach" in the development of training programmes for health personnels, two cases of actual application according to some of my experience will be briefly discussed as follows:-

1. The Development of the Curriculum for the Training of Midwifery Students

This began in July 1978 with the collection of various data including the actual tasks performed by the midwives on duty at some health stations in Chiang Mai, Lampoon and Lampang. The data processing was done by the staff of the Maternal and Child Health Centre and the School of Midwifery in Chiang Mai with the support of the staffs of the Training, Supervision and Education Section, Division of Family Health, Department of Health, Ministry of Public Health. They later organized a workshop to develop the curriculum to train the midwives by using the processed data as input (Exhibition 3). The participants were from various sectors including the teachers from all of the six Schools of Midwifery in Thailand. The output of that workshop was the first draft of the curriculum. Again, this was used as an input to the second workshop which has been held at the Faculty of Medicine, Chiang Mai University, since 18 December 1978. This workshop will end on 22 December with an expected output as the finished curriculum. This will be implemented and evaluated next year in at least two Schools of Midwifery out of six that exists in Thailand. Until then, the result of training of midwives by using the "Need-based" curriculum will be revealed.

2. The Development of the Refresher Course for Midwives

This project started in August 1978 by surveying the training needs at the provincial level based on the task performance discrepancy of the midwives serving in various types of health services facilities all over Thailand. Several workshops were held in various regions of Thailand to develop "Need-based" training programmes using the data obtained from the survey as well as other related data including the health problems to be solved by the midwives in each of the nine regions of Thailand. This is still an ongoing process with the programme at regional level for only six regions already completed. The training programme for the remaining three regions will be completed in January 1979.

The complete programme for the refresher course will be developed in February by compiling the nine programmes together. The final programme for the two week refresher course will consist of the core curriculum which will be at the national level with a supplementary curriculum which may be unique for each region or province (Exhibition 4).

This training programme will be implemented and evaluated by five Maternal and Child Health Centres in Thailand in the training of five batches of midwives as a trial during March-April 1979. After reviewing the pro-

gramme according to the evaluation results obtained, the nation wide training of midwives will begin in June 1979. According to this project, about 3000 midwives will complete this refresher course by the end of 1981. Again, only when that time comes, the result of failure or success will become apparent.

Although the results of the two projects already discussed are not available at this moment, most of us who are involved seem to feel highly confident that the development of "Need-based" training programmes would certainly yield better results than the former training programmes which were developed with the "Subject-oriented Approach" based only on the teaching need of the teachers.

Towards National Application

Although the "Need-based" approach to curriculum development for the health personnel has been discussed since the Third National Conference on Medical Education held in Bangkok in 1971 which stressed on the training of physicians according to the needs of the society; this approach has never been applied fully at the national level in Thailand. However, some medical schools have attempted to develop their curricula according to this approach, e.g. Faculty of Medicine, Khon Kaen University in 1973 basing upon the health needs as identified in some of the North-eastern provinces and Faculty of Medicine, Chulalongkorn University which in 1976 began its project on Medical Education for Students in Rural Area. Some of the other medical schools as well as the schools for other health personnels are also active in organizing seminars or in the process of developing need-based training programmes.

With this trend at present, it is appropriate to apply the "Need-based" approach to the development of training programmes for health personnel at the national level. The model for developing a refresher course for midwives as mentioned earlier can be applied to developing the National Medical Curriculum by assigning each medical school to firstly develop a curriculum based on the health needs of the people in the region assigned to their responsibility (Exhibition 5). All the medical schools can later on meet to develop a national curriculum based upon those curricula already developed. This approach can also be utilized by the schools of other health personnel as well.

Possibility of Regional Application

As we all know, the curricula used by most of the medical schools in the countries of the Southeast Asian Region at present are still Western-oriented. Although utilized in the training of physicians for decades, they may not be quite suitable to the health needs of our countries.

Thus, in order to ensure that future training of the physicians in our countries will be completely tailored to the health needs of the people in this region; each country should be assigned the reponsibility to develop its own "National Medical Curriculum" by using the "Need-based Approach". Later

on a "Regional Medical Curriculum" can be developed by compiling the common parts of the national curricula which can be used as the core curriculum in the countries of this region. However, the part of the national curriculum that differs can be supplemented to the regional curriculum for more appropriate use in each country.

The approach to develop the medical curriculum as mentioned above can still accommodate the "Global Health Need" as a supplement in the form of elective courses. This might be helpful in pacifying the academicians who might be concerned in maintaining "Academic Excellence" or "International Standard" as well as preserving the real essence of the core part of the curriculum which is developed with the main purpose to train the physicians according to the health needs of the people in our countries.

Concluding Remarks

In conclusion, the development of need-based training programmes for health personnel which is now gaining interest from all concerned during this decade will be one of the approaches in helping us to achieve the goal "Health for All" in the near future. This approach requires a bold attempt and strong determination of all concerned to overcome the natural resistance to change which usually prevails. However, it is possible to facilitate the achievement of this approach by applying some of the concepts in Buddhism i.e. "Make one's mind empty" and "Loosen oneself from all the attachments". In doing so, our mind will be free from the "Old Thoughts" and we shall be able to study things as they are objectively without any bias which might enable us to succeed in the development of training programmes of health personnels according to the "Real Health Needs" rather than the "Felt Needs" especially those of ourselves.

EXHIBITION 1: A GUIDELINE FOR THE DEVELOPMENT OF "NEED-BASED" TRAINING PROGRAMMES FOR HEALTH PERSONNELS

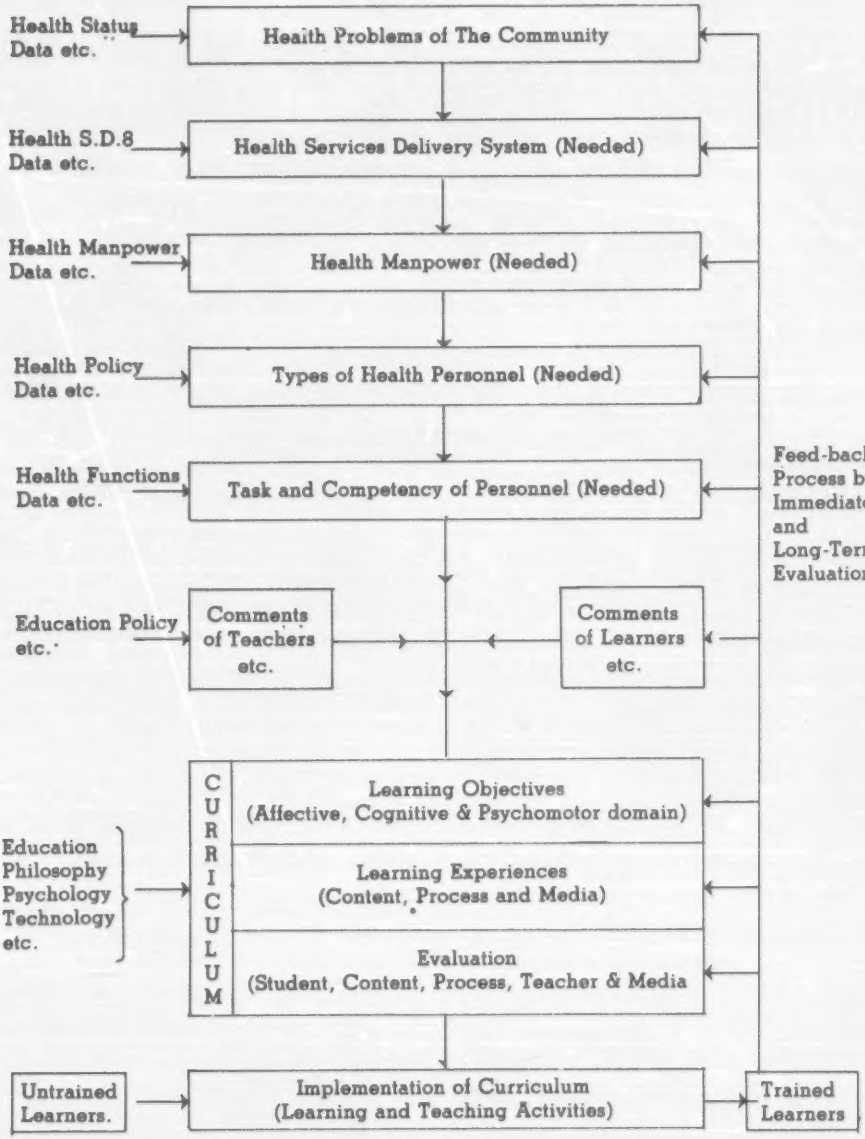
A. Analysis of the Activity Undertaken in the Development of the Programme

1. Are the health needs of the people as based on the health problems of the country identified?
2. Are the health services delivery system and health manpower needed to meet the health needs of the people identified?
3. Are the type, task and competency of the personnel needed identified?
4. Are the needs of the learners, teachers, supervisors, administrators, etc. identified?
5. Are those needs identified as "Real Needs"?

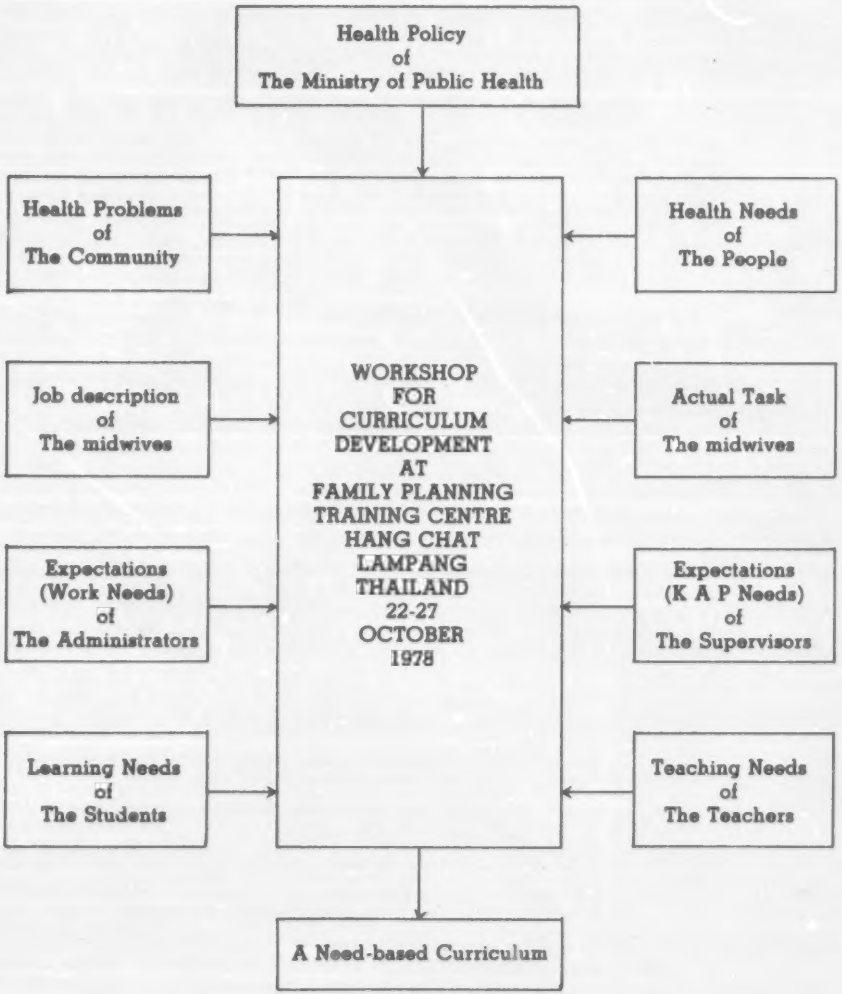
B. Analysis of the Training Programme

1. Is the programme developed by basing on all the identified needs?
2. Are the objectives of the programme primarily derived from the task and competency of the learner as needed to solve the health problem and stated in behavioural terms with all the domains included?
3. Are the subject content as well as method and media of instruction derived from the objectives?
4. Is the evaluation comprehensive, continuous and conforming to the objective of the programme?
5. Is the programme suitable to all the identified needs as well as applicable and acceptable in the present situation?

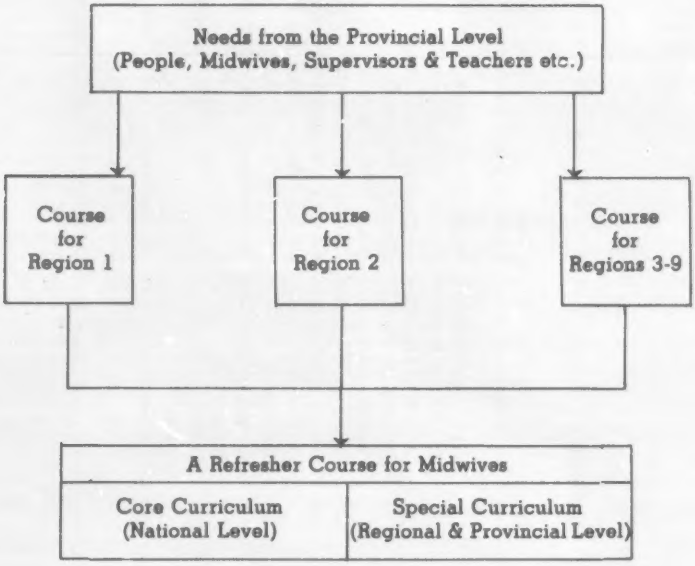
EXHIBITION 2: A MODEL FOR DEVELOPING "NEED-BASED" TRAINING PROGRAMMES FOR HEALTH PERSONNELS


Health Status Data etc.
Health Problems of The Community
Health S.D.8 Data etc.
Health Services Delivery System (Needed)
Health Manpower Data etc.
Health Manpower (Needed)
Health Policy Data etc.
Types of Health Personnel (Needed)
Health Functions Data etc.
Task and Competency of Personnel (Needed)
Feed-back Process by Immediate and Long-Term Evaluation
Education Policy etc.
Comments of Teachers etc.
Comments of Learners etc.
CURRICULUM
Learning Objectives (Affective, Cognitive & Psychomotor domain)
Learning Experiences (Content, Process and Media)
Evaluation (Student, Content, Process, Teacher & Media
Education Philosophy Psychology Technology etc.
Untrained Learners.
Implementation of Curriculum (Learning and Teaching Activities)
Trained Learners

EXHIBITION 3: THE "NEED-BASED" APPROACH TO CURRICULUM DEVELOPMENT
(A CURRICULUM FOR THE TRAINING OF MIDWIVES IN THAILAND 1978)


Health Policy of The Ministry of Public Health
Health Problems of The Community
Health Needs of The People
Job description of The midwives
Actual Task of The midwives
WORKSHOP FOR CURRICULUM DEVELOPMENT AT FAMILY PLANNING TRAINING CENTRE HANG CHAT LAMPANG THAILAND 22-27 OCTOBER 1978
Expectations (Work Needs) of The Administrators
Expectations (K A P Needs) of The Supervisors
Learning Needs of The Students
Teaching Needs of The Teachers
A Need-based Curriculum

EXHIBITION 4: THE DEVELOPMENT OF A REFRESHER COURSE FOR MIDWIVES (A "NEED-BASED" APPROACH FROM THE PROVINCIAL TOWARDS NATIONAL LEVEL)



EXHIBITION 5: ASSIGNMENT OF SCHOOLS OF HEALTH PERSONNELS (MEDICINE) TO THE 9 REGIONS OF THAILAND

Region	Part of the country	Number of provinces in the Region	Responsible Schools of Health Personnels (Medicine)
1	Upper central	9	Faculty of Medicine, Ramathibodi Hospital, Mahidol University, Bangkok 4
2	Eastern	8	Faculty of Medicine, Chulalongkorn University, Bangkok 5
3	Lower north-eastern	7	Pramongkutklao College of Medicine, Bangkok 4
4	Upper north-eastern	9	Faculty of Medicine, Khon Kaen University, Khon Kaen
5	Upper northern	9	Faculty of Medicine, Chiang Mai University, Chiang Mai
6	Lower northern	8	Faculty of Medicine, Chiang Mai University, Chiang Mai
7	Lower central	8	Faculty of Medicine, Siriraj Hospital, Mahidol University, Bangkok 7
8	Upper southern	7	Faculty of Medicine, Siriraj Hospital, Mahidol University, Bangkok 7
9	Lower southern	7	Faculty of Medicine, Prince of Songkhla University, Songkhla

N.B. Responsible schools of other health personnels should be those situated in or close to each of the 9 regions of Thailand.

DISCUSSION

The discussants for this session were: Dr. Sumarto; Prof. Rachit Buri; and Prof. Wong Poi Kwong.

The essence of the discussion is summarized as follows:

In discussing the papers Dr. Sumarto offered the following views. Generally, he is of the opinion that several controversial issues have been raised in the papers.

Referring to Prof. Tongchan's paper, he explains that it is difficult to deal with the training of doctors for primary health care as the mere learning of packages. Teaching he clarifies, is geared to disease not the learning of packages *per se*.

On the problem of identifying the teachers to tackle the training approach suggested, Dr. Sumarto is of the view that teachers themselves are many of them not conversant with the approach. He also expresses reservation about the selection procedures proposed for medical training. Equally he is unsure about the remedy that may be adapted if the learning tasks themselves are not clearly defined.

Referring to Dr. Rajakumar's paper, Dr. Sumarto agrees that the physician should have competent skills. However, he insists that the term 'skills' should be clearly defined particularly in terms of the needs of the primary health care delivery system and the categories of medical personnel that need to be trained.

Prof. Rachit Buri also agrees that high standards of medical practice should be maintained. He also is of the view that education should, besides maintaining standards, aid the student to develop his potentials including competence in medical practice.

Referring to the papers by Prof. Tongchan and Dr. Muangtong, he says that both papers are highly technical. Nevertheless, he is prepared to go along with their basic theses. He adds that frequently policies are not evenly matched by implementation.

Elaborating further, Prof. Rachit Buri explains that frequently educational planning as a concept and practice is not well understood by the layman.

Other factors which exacerbate the problem implementation are: lack of personnel and the use of inappropriate technology in teaching. Further, evaluations carried out are not always reliable. Factual and value statements are confused.

The medical teaching curriculum, he feels, should emphasize processual development besides the acquisition of skills and facts. Medical teaching he suggests should be constituted of a cluster of procedures for the acquisition of the objectives aimed at. Skills that need to be emphasized are: process skills, perceiving skills, communicating skills, decision-making skills, organising skills, creative skills, knowing skills, etc.

Prof. Wong Poi Kwong in referring to the need to have dialogue with the Government expressed the view that *pari passu* encouragement to do so should come from the University, the Government and those who implement the primary health delivery system.

Turning to Dr. Rajakumar's paper, Prof. Wong makes the clarification that doctors do not promise though patients may hold expectations. Therefore, medical training should give attention to expectations which emanate from the public and how such expectations might be met by the Medical School.

In responding to Dr. Muangtong's paper, Prof. Wong is of the view that health centres are normally not suitable for the purpose of training medical personnel as the environment associated with them lacks the intellectual requisites so important to learning. While he agrees that real needs must be met, it is not possible to overlook other health needs of the community.

Dr. Molly Cheah began by making a distinction viz., that primary health care is not the same as total health care. The needs of primary health care, she insists, should be met by frontline health workers who need not have the level of medical training as physicians.

She is in favour of traditional medicine being assigned a role in the primary health care delivery system particularly in view of the fact that there is still extensive use of the services of traditional healers in both rural and urban areas. Traditional healers, she adds, are meeting real needs not merely felt needs.

The speakers were then invited to respond to the discussants by the Chairman.

Dr. Tongchan began by making a clarification. He explains that in Thailand there are three levels in the health care system viz., the primary level; the secondary level (associated with the district hospital); and the tertiary level. To ascertain the role and function of doctors, he explain further, one need to know the level to which the doctors are going to be assigned to. The curriculum will therefore be defined by the level of service that is to be provided by the doctor. His paper refers specifically to doctors serving at the primary level of the health system. The curriculum at this level he feels must be multi-functional.

Referring to the comment by Dr. Sumarto, Prof. Tongchan says that mastery learning emphasizes individualized learning. The teacher's role is to facilitate and motivate, assisted by adequate feed-back. The unit of teaching can be organized in packages with definite objectives using tapes, documents and appropriate technology within the context of a set time. In addition, examinations are to be conducted from time to time.

Referring to the second comment made on teachers, Prof. Tongchan explains that to acquire competence and expertize in dealing with the task of teaching primary health care, teachers should have knowledge of educational technology. This, he believes, can be acquired with the assistance of colleagues in the Faculty of Education. He further elaborates that WHO in its

Report had encouraged medical teachers to acquire understanding and knowledge of education both in terms of its theory and practice.

On the query about where a Medical School dealing with primary health needs should be sited, Prof. Tongchan is of the view that ideally it should be in the rural areas, though he realizes that this may not be always feasible.

On the question of large classes, Prof. Tongchan explains that more packages could be produced to meet the problem.

Dr. Rajakumar, in responding, clarified a few points made in his paper. He says that the phrase used by him viz., "promising too much and delivering too little" is in reference to overall medical activities. Students, he insists, should be provided with good role models as a means to encourage them to remain in the rural areas.

On the point raised regarding the need to maintain standards in medical practice, he explains that it is with the intention to keep intact the scientific content of the medical course. He feels that there is a danger of losing sight of this basic requirement. The distinctive contribution of the physician must be maintained, he adds.

Dr. Muangtong in responding reiterated a point he made earlier in his paper viz., the need for the doctor dealing with primary health care to divest himself (empty his mind) of all pre-conceptions. He advocates the finding of the appropriate point on the continuum to ascertain to best approach possible. He stresses that there is a need for a multi-logue not merely a dialogue among all those dealing with the problem of primary health care delivery.

He explains further that education is a life-long process. There is therefore no need to unnecessarily load students with extra knowledge. Students should be given the opportunity to solve problems as they go along. Medical teachers are by no means experts. Furthermore, learning should be pupil-centred, he concludes.

PART VI

PROPOSALS AND RECOMMENDATIONS

PROPOSALS AND RECOMMENDATIONS

In the concluding session on proposals and recommendations the Director of RIHED invited delegates and participants to submit proposals for future research and recommendations for consideration by RIHED. Indonesia submitted 12 research proposals and 5 recommendations; Malaysia 8 research proposals and 4 recommendations; Singapore 7 research proposals; Thailand 10 research proposals; and 1 research proposal from a Foundation representative.

The proposals are listed below:

Indonesia

A. *Research Proposals*

1. Study the effectiveness of the university curriculum in relation to delivery of primary health care.
2. Primary health care manpower development studies.
3. Community health worker studies.
4. Appropriate health technologies.
5. Traditional medicine.
6. Identification of health needs and demands of the community.
7. Evaluation of the primary health care system.
8. Alternative strategies in financing primary health care programmes.
9. Supportive health services infrastructure for primary health care.
10. Assessment of community and individual actions.
11. Acceptability and effectiveness of primary health care by the community.
12. Attitude and behaviour of the community regarding illness and primary health care facilities.

B. *Recommendations*

1. Monitoring by RIHED of basic health care programmes of universities in Asia (compilation and distribution).
2. Encouragement by RIHED for the exchange of experience in basic health care between tertiary institutions in the region (e.g. through seminars and exchange of staff).
3. Encouragement by RIHED in the formation of a body in tertiary institutions to study the inclusion of basic health care in the medical faculty curriculum.
4. Encouragement by RIHED for better relations between tertiary institutions and the Ministry of Health, especially on the delivery of basic health care by:
   i) encouraging and funding of research related to basic health care;
   ii) presentation and distribution of research findings in basic health care.

Malaysia

A. *Research*

1. Patterns of morbidity and mortality in rural and urban areas and by social class and occupations.
2. Motivation of doctors and health workers to work in rural areas and remain there as part of the community.
3. Decision making process (conflicts and obstacles) in issues concerning delivery of health care.
4. Magnitude of social and economic factors in the health of a community.
5. Development of medical record system for primary care.
6. Assessment of needs and demands in primary health care by multidisciplinary team.
7. Assessment of hospital utilization, e.g. appropriateness of hospital and patient attendance in patient admissions.
8. Study of the cost effectiveness of primary health care.

B. *Policy Recommendations*

1. Establishment of a national institute of primary care to undertake research and coordinate training and planning.
2. Need for the establishment of Departments of General Practice/Primary Care in universities.
3. Doctors and health personnel should receive incentives to set works in rural areas.
4. Senior medical and scientific personnel in developing countries should be given greater rewards and recognition to retain their services.

Singapore

Research Proposals

1. Assessment of needs and demands in primary health care by a combined team of physicians-sociologists and economists.
2. Patterns of morbidity and mortality in rural areas and the changes that are occurring (epidemiology).
3. Relationships between social class and health in rural and urban areas.
4. Attitudes of doctors and other medical doctors towards work in rural areas.
5. Motivation and rewards to draw trained personnel to rural areas: what strategy?
6. What patients currently seen in hospitals could be effectively located at health centres (or need no treatment or could be self-medicated)?
7. What is the cost-effectiveness of primary health care?
8. Development of a medical record system for use in primary care.
9. Study of decision-making process in issues involved in training doctors for primary care.
10. Magnitude of social and economic factors in health.

Thailand

Research Proposals

I. *Health Needs and Problems*

Universities can contribute more in study of health needs and problems in each country in a more comprehensive and wider context, e.g.

1. Study and real health needs based on the health problems and profiles of each country.
2. Study the social belief regarding health in each country.
3. Study the possible role of the university in upgrading the practice of traditional healers in each country.

II. *The Health Care Delivery System: Urban and Rural*

The university researchers should take part in studying various aspects of the Health Care Delivery System of each country on both "Consumer" and "Academician" as follows:

1. Study the existing different categories of health personnel in each country in terms of:—
   1.1 Function and role.
   1.2 Appropriate number based on tasks and work load.
2. Study the organization of the health care delivery system in terms of problems and ways to solve them.
3. Study the role of traditional medicine in the existing health care delivery system.

III. *Tertiary Education in Health Sciences*

In order to come up with innovations in tertiary education, the study of the educational problems and ways to solve them especially with a scientific approach should be performed.

1. Comparative study of the curricula in medical and other related schools including various teaching and evaluation methods used in each country.
2. Feasibility study of the integration of social science into the curricula for the health professionals.
3. Experimental study of various innovations in teaching and learning in schools for health professionals, e.g. Team learning, Team teaching, Mastery learning, etc.
4. Study of the application of "Comprehensive and Integrated Development Approach" by combining the efforts of health teams, educational teams, agricultural teams, etc. in community development.

Roche Far East Research Foundation, Hong Kong

Research Proposal

In view of the relative lack of scientific data on rural epidemiology (with the exception of Malaria-Leprosy-Schistosomiasis) it is suggested that

universities increase studies in this field, using, for instance, the "in field training" of medical students in the rural areas to collect data, according to strict methodology, so that, little by little, it will be possible to draw maps of the distribution and incidence of various disease in each Province or District in each country.

These basic epidemiologic data are needed both by universities, for future orientation of teaching, and by Public Health Ministries, for future planning of their priority programmes.

Closing of the Regional Seminar

Following the brief presentation of proposals and recommendations, the Director of RIHED, Dr. Nasution delivered his concluding speech of thanks and appreciation.

Prof. Dr. Wong Poi Kwong responded on behalf of the participants and declared the Seminar close.

APPENDIX

PROGRAMME OF THE SEMINAR

Thursday, 21 December 1978

Official Opening at the Conference Hall, Faculty of Medicine, Chiang Mai University

0815—1130

Welcoming Address by Dr. S. Nasution, Director of the Regional Institute of Higher Education and Development (RIHED)

Opening Address by His Excellency Dr. Kasem Suwanagul, Minister of the Office of University Affairs, Thailand

Greetings by Prof. Pradit Wichaiyadit, Rector of Chiang Mai University

Keynote Address by Prof. Dr. Okas Balankura on "Basic Health Care in Southeast Asia: Problems and Prospects"

1135—1230

Tour of campus of Chiang Mai University (CMU)

Rincome Hotel, Payorm Room

Session 1: Contributions of Higher Education in Meeting Basic Health Needs in Rural Areas: Problems and Prospects

1400—1700

Chairman: Prof. Dr. Kylasa Somasundaram

Rapporteur: Dr. Tham Seong Chee

Papers presented by:

(1) Dr. Sumarto Danusugondho (Indonesia)
(2) Dr. Molly Cheah (Malaysia)
(3) Dr. Sepulveda-Alvarez Claudio (UNAPDI)
(4) Prof. Dr. Kawee Tungsubutra (Thailand)

Discussants:

(1) Dr. Sunoto
(2) Prof. Dr. Okas Balankura
(3) Dr. M.K. Rajakumar
(4) Dr. Raymond Lasserre

Friday, 22 December 1978

Session 2: Delivery of Primary Health Care in Urban Areas: Role of Tertiary Institutions

0900—1200 Chairman: Prof. Dr. Wong Poi Kwong

Rapporteur: Dr. Tham Seong Chee

Papers presented by:

(1) Dr. Suncto (Indonesia)
(2) Dr. Ismail Saad (Malaysia)
(3) Prof. Dr. Phoon Wai-On (Singapore)
(4) Prof. Dr. Rachit Buri (Thailand)

Discussants:

(1) Dr. Alex Papilaya
(2) Prof. Dr. Tongchan Hongladarom
(3) Dr. Widodo Talogo
(4) Prof. Dr. Charn Sathapanakul

Session 3: University Curriculum in Health-Related Disciplines: An Evaluation

1400—1700 Chairman: Dr. Sumarto Danusugondho

Rapporteur: Dr. Tham Seong Chee

Papers presented by:

(1) Dr. Alex Papilaya & Dr. Widodo Talogo (Indonesia)
(2) Prof. Dr. Kylasa Somasundaram (Malaysia)
(3) Prof. Dr. Wong Poi Kwong (Singapore)
(4) Prof. Dr. Avudh Srisukri (Thailand)

Discussants:

(1) Dr. Ismail Saad
(2) Prof. Dr. Phoon Wai-On
(3) Dr. Bachtiar Ginting

Saturday, 23 December 1978

Session 4: Towards the Development of Basic Health Needs-oriented Curriculum and Programmes

0830—1020 Chairman: Prof. Dr. Okas Balankura

Rapporteur: Dr. Tham Seong Chee

Papers presented by:

(1) Prof. Dr. Tongchan Hongladarom (Thailand)
(2) Dr. M.K. Rajakumar (Malaysia)
(3) Dr. Muangtong Khemmani (Thailand)

Discussants:
(1) Dr. Sumarto Danusugondho
(2) Prof. Dr. Rachit Buri
(3) Prof. Dr. Wong Poi Kwong
(4) Dr. Molly Cheah

1030—1055 National delegates propose possible topics for research and other recommendations relating to the role of higher education and basic health needs

1055—1110 Closing Address by Prof. Dr. Wong Poi Kwong

LIST OF PARTICIPANTS AND OBSERVERS

PARTICIPANTS

Indonesia

Prof. Harsojo, Member, RIHED Governing Board, Rector, Universitas Tarumanegara, Jalan Letjen S. Parman, Jakarta, Indonesia

Prof. Dr. Winarno Surakhmad, Member, RIHED Governing Board, Rector, IKIP Negeri, Rawamangun, Jakarta Timur, Indonesia

Dr. Bachtiar Ginting, Dean, Faculty of Medicine, Universitas Sumatera Utara (USU), Jalan Dr. Mansur 5, Campus USU, Medan, Sumatera Utara, Indonesia

Dr. Alex Papilaya, DTPH, Associate Dean, Faculty of Public Health, Universitas Indonesia, Salemba Raya 6, Jakarta, Indonesia

Dr. Sumarto Danusugondho, M.P.H., Chairman of the Coordinating Body of Community Medicine and Assistant Professor, Universitas Airlangga, Faculty of Medicine, 47 Darmahusuda, Surabaya, Indonesia

Dr. Sunoto, Lecturer, Department of Child Health, Medical School, Universitas Indonesia, 6 Salemba, Jakarta-Pusat, Indonesia

Dr. R. Widodo Talogo, Head, Department of Public Health, Medical Faculty, Universitas Indonesia, Pegangsaan Timur 16, Jakarta-Pusat, Indonesia

Malaysia

Prof. Tan Sri (Dr.) Mohd. Rashdan b. Hj. Baba, Member, RIHED Governing Board, Vice-Chancellor, University of Agriculture Malaysia, Serdang, Selangor, Malaysia

Dr. Molly Cheah, Medical Officer, Division of Planning and Development, Ministry of Health, K-14, Jalan Duta, Kuala Lumpur, Malaysia

Dr. Ismail Saad, Associate Professor and Dean, Faculty of Medicine, Universiti Kebangsaan Malaysia, Peti Surat 2418, Jalar Raja Muda, Kuala Lumpur, Malaysia

Dr. M.K. Rajakumar, Chairman, Committee on the Future of the Health Services, MMA, Chairman of Council, College of General Practitioners, Malaysia, President-elect, Malaysian Medical Association (MMA), The Clinic, 38 Loke Yew Road, Kuala Lumpur 06-04, Malaysia

Prof. Dr. Kylasa Somasundaram, Dean, Faculty of Medicine, University of Malaya, Pantai Valley, Kuala Lumpur, Malaysia

Singapore

Prof. Dr. Phoon Wai-On, Head, Department of Social Medicine and Public Health, Faculty of Medicine, University of Singapore, Outram Hill, Singapore 3

Dr. Tham Seong Chee, Associate Professor, Department of Malay Studies, University of Singapore, Bukit Timah Road, Singapore 10

Prof. Dr. Wong Poi Kwong, Dean, Faculty of Medicine, University of Singapore, Sepoy Lines, Singapore 3

Thailand

Dr. Sippanondha Ketudat, Chairman, RIHED Governing Board, Secretary-General, Office of the National Education Commission, Sukhothai Road, Bangkok 3, Thailand

Prof. Dr. Avudh Srisukri, Dean, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand

Prof. Dr. Rachit Buri, Dean, Faculty of Medicine, Ramathibodi Hospital, Mahidol University, Rama VI Road, Bangkok, Thailand

Prof. Dr. Charn Sathapanakul, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand

Prof. Dr. Kawee Tungsubutra, Dean, Faculty of Medicine, Khon Kaen University, Khon Kaen, Thailand

Prof. Dr. Okas Balankura, Chairman, Department of Surgery, Faculty of Medicine, Chiang Mai Univ sity, Chiang Mai, Thailand

Prof. Dr. Tongchan Hongladarom, Head, Unit of Medical Education, Faculty of Medicine, Chulalongkorn University, Bangkok 5, Thailand

OBSERVERS

Asia Foundation

Mr. John E. James, Representative, The Asia Foundation, Sibunruang 2 Building, 1/7 Convent Road, Bangkok 5, Thailand

Chiang Mai Univerisity

Prof. Dr. Aroon Santadusit, Faculty of Medicine, Chiang Mai Univeristy, Chiang Mai, Thailand

Prof. Chairoj Saeng-Udom, Dean, Faculty of Associated Medical Sciences, Chiang Mai University, Chiang Mai, Thailand

Mrs. Somchit Partikorn, Dean, Faculty of Nursing, Chiang Mai Unversity, Chiang Mai, Thailand

Mrs. Helen Sherbenou, Faculty of Nursing, Northern Illinois University, Illinois, U.S.A., Department of Preventive Medicine, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand

Prof. Dr. Tawan Kangwanpong, Rector-Designate, Chiang Mai University, Chiang Mai, Thailand

200

Payap College

Mrs. Nipa Totsparin, McCormick Faculty of Nursing, Payap College, P.O. Box 161, Chiang Mai, Thailand

Chulalongkorn University

Dr. Muangtong Khemmani, Associate Professor and Vice-Rector, Chulalongkorn University, Bangkok 5, Thailand

Pramongkutklao College of Medicine

Dr. Col. Mayuree Balankura, Deputy Director, Academic Section, Pramongkutklao College of Medicine, Rajvithi Road, Phya Thai, Bangkok, Thailand

Regional Teacher Training Centre of WHO S.E. Asia Region

Dr. Moin Uddin Ahmad, Dacca Medical College, Dacca, Bangladesh, WHO Fellow, Unit of Medical Education, Faculty of Medicine, Chulalongkorn Hospital, Bangkok 5, Thailand

Mr. Sith Chatsuwan, Office of the Dean, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand

Dr. Quazi Emdadul Huq, Mymensingh Medical College, Bangladesh, WHO Fellow, Unit of Medical Education, Faculty of Medicine, Chulalongkorn Hospital, Bangkok 5, Thailand

Dr. (Mrs.) Tehmina Hussain, WHO Fellow, Unit of Medical Education, Faculty of Medicine, Chulalongkorn Hospital, Bangkok 5, Thailand

Miss Supawadee Limpanatorn, Department of Public Health Nursing, Faculty of Nursing, Mahidol University, Bangkok 7, Thailand

Dr. Abdul Manan Sikder, Department of Pathology, Mymensingh Medical College, Bangladesh, WHO Fellow, Unit of Medical Education, Faculty of Medicine, Chulalongkorn Hospital, Bangkok 5, Thailand

Miss Sumana Sophonpanth, School of Physical Therapy, Siriraj Hospital, Mahidol University, Bangkok, Thailand

Miss Duangporn Thadagittisarn, Public Health Centre, Cholburi, Thailand

Dr. Gangadhar Behera, Head of Department of Otolaryngology, Medical College, Cuttack 753007, Orissa, India, WHO Fellow, Unit of Medical Education, Chulalongkorn Hospital, Bangkok, Thailand

Roche Far East Research Foundation

Dr. Raymond Lasserre, Medical Director, Roche Far East Research Foundation, 1332 Prince's Building, GPO Box 860, Hong Kong

U.N. Asia and Pacific Development Institute

Dr. Sepulveda-Alvarez Claudio, Expert on Health and Social Development, U.N. Asian and Pacific Development Institute, P.O. Box 2-136, Bangkok, Thailand

U.N. Children's Fund (UNICEF)

Mr. Robert Esguerra Barry, Regional Director, UNICEF, Pra Atit Road, Bangkok 2, Thailand

Universiti Sains Malaysia

Mr. R. Padmanathan, Senior Assistant Registrar, Universiti Sains Malaysia, Minden, Penang, Malaysia

RIHED Secretariat

Dr. Sorimuda Nasution, Director, RIHED, CSI Building, Heng Mui Keng Terrace, Singapore 0511

Dr. Banphot Virasai, Deputy Director, RIHED, CSI Building, Heng Mui Keng Terrace, Singapore 0511